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The *Journal of the Travellers' Aid Society* is Game Designers' Workshop's registered trademark for its science fiction gaming magazine devoted to **Traveller.**

Traveller is Game Designers' Workshop's registered trademark for its role-playing game of science fiction adventure set in the far future.

Dates in this issue of the *Journal* are given in accordance to an arbitrary Imperial calendar of 365 days. The date consists of a three-digit day number (the current day of the year) a dash, and a four digit number (showing the current year since the founding of the Imperium).

The date of this issue is **244-1110**, or the 244th day of the 1110th year of the Imperium.

The *Journal of the Travellers' Aid Society* is a science fiction magazine devoted to **Traveller**, GDW's role-playing game set in the far future.

Editor: Loren K. Wiseman
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Publisher: Game Designers' Workshop
Artists in this issue: William H. Keith, Jr.— Cover pp. 9, 11, 13, 38, 41; D. J. Barr— pp. 47; Liz Danforth— p. 33.

WINNER — H. G. WELLS AWARD: BEST MAGAZINE COVERING ROLE-PLAYING, 1979, 1980, 1981

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Advertisers should inquire for an advertising rate card.

Submissions: We welcome articles and illustrations for the **Journal.** Please inquire before submitting manuscripts, enclosing a stamped, self-addressed envelope; we will send manuscript guideline and format sheets. Foreign inquiries (except APO/FPO) please include International Reply Coupon.

From the Management

This is being written in the gap between conventions. It seems like only yesterday we got back from Atlanticon in Maryland, and we will leave in a day or two to go to Gencon XVII in Wisconsin. Conventions are grueling, but they provide the Workshop an opportunity to communicate directly with our customers, listen to complaints and compliments, and find out what they want.

Here's an item of possible interest to **Traveller** players and referees: Jeff Swycaffer (a long-time **Traveller** fan) tells us that *Not in Our Stars,* his **Traveller**-based science fiction novel, will be published in September by Avon Books. Taken from his own universe, the novel (and others in a series, also accepted for publication) will detail events in the history of the Concordat of Archive. Some readers of the *Journal* may have already seen portions of the characters, background, and plot in Jeff's article *Exonidas Starport* in *Dragon* #59. I've seen the novel already (Jeff was kind enough to send the Workshop an early manuscript) and I think most players and referees will find it inspires them to many improvements in their own campaigns.

In other product news, the first of a series of licensed **Traveller** programs will be released this summer by Barac Limited of Shreveport, Louisiana. Initial offerings will include a text adventure and two utility programs. The text adventure will combine state-of-the-art programming techniques with the **Traveller** rules to allow personal combat with non-player characters within the adventure, use of game skills and personal characteristics, and use of **Traveller** weapons and equipment. The program makes actual rules decisions transparent to the user, who never sees the die rolls, only the results. The adventure also includes a sophisticated parser capable of handling complex instructions, non-player characters, and multi-dimensioned rooms. The other programs will include a character generation utility and an encyclopedic compilation of library data. The programs will initially be available for the Commodore 64, with follow-on releases planned for Apple II and Atari. Barac is actively soliciting consumer input. If you have any suggestions for future programs, write them at Barac Limited, PO Box 8026, Shreveport, LA 71108.

J. Andrew Keith has asked that I announce the following modifications to his *Scouts* variant published in *Journal* #19:

> Temperature increase from 40° north or south latitude towards the equator is 1°C for every 2° latitude moved towards the equator (not 5° latitude as the article indicated). Total change will be +20°C, not +8°. The same is true of twilight zone worlds.

In addition (some days you can't win) the initial assignment and mustering-out tables, along with a table of ranks, were inadvertantly left out of John Ford's *Skyport Authority* article in the same issue. The missing tables are printed on page 3.

Issue number 20 "feedbacked" as follows:

AZ:Critical Vector	4.30	Travellers' Atlas	3.63
AZ:Raid on Staatorlai	3.47	From the Management	3.27
The Ways of Kuzu	4.30	Just Detected	2.72
Temperature in **Traveller**	3.92	Traveller News Service	3.95
Adventures in **Traveller**	3.71	Bestiary	3.37
Prologue	3.65	Casual Encounter:	
Small Cargos	3.58	Gamaagin Kaashukin	3.72
Spinal Mounts Revisited	3.91	Issue 20 as a whole	not rated

Table of Ranks

	Administration	*Passenger Service*	*Freight Handling*	*Customs/Security*
1	Chief Clerk	Team Leader	Crew Chief	Lieutenant
2	Asst. Supervisor	Shift Supervisor	Shift Supervisor	Captain
3	Supervisor	Supervisor	Supervisor	Inspector
4	Asst. Director	Portmaster	Dockmaster	Chief Inspector
5	Port Director & General Mgr.	—	—	—
6	SPA Exec. Dir.	—	—	—

Initial Assignment Table

Port Code		*A*	*B*	*C*	*D*
Die Roll	**1**	P	P	P	P
	2	P	F	F	F
	3	F	F	F	F
	4	A	A	F	A
	5	A	A	A	C
	6	C	C	C	C

P = Passenger Services
F = Freight Handling
A = Administration
C = Customs/Security

Mustering-Out Table

	Cash	*Material Benefits*
1	Cr1,000	Blade
2	Cr1,000	Blade
3	Cr3,000	Gun
4	Cr3,000	Bar Chit
5	Cr5,000	+1 End
6	Cr10,000	+1 Edu
7	Cr20,000	+1 Soc
8	Cr50,000	Yacht

DMs: Rank 1+, +1; rank 5+, +2; Gambling skill, +1 on *Cash* table.

GDW products (including **Traveller**) are available through distributors in the following countries:

Japan: GDW products are imported and distributed by Hobby Japan Co., LTD, 26-5, 5-Chome, Sendagaya, Shibuya-Ku, Tokyo, Japan. Some titles are translated into Japanese.

Italy: GDW products are imported and distributed by Pacific Enterprise Italia, Via R. Di Lauria, 15, Milano, Italy.

Sweden: GDW products are imported and distributed by Hobbyhuset, Box 2003, S-750 02, Uppsala, Sweden.

New Zealand: GDW products are imported and distributed by Blackwood Gayle, PO Box 28358, Aukland, New Zealand.

Australia: GDW products are imported and distributed by Jedko Games, 18 Fonceca St, Mordialloc, Vic.

JUST DETECTED

CONVENTIONS

Gateway 84

September 1-3, 1984, Los Angeles, California. Presented by the Strategy Games Conference, Inc. Featuring boardgames, SF&F RPGs, miniatures, seminars, dealers, flea markets and special game auctions. For further information, write (enclosing a SSAE): Gateway 84, PO Box 2577, Anaheim, CA, 92840.

PLAY AIDS

Duneraiders

Another approved **Traveller** adventure from Gamelords, set on the desert world of Tashrakaar. The adventurers become involved with competing mineral interests, and soon learn that the desert and rival firms are not their only enemies. The group must also contend with the savage and enigmatic Duneraiders.

One sixty-page, 5'' x 9'' booklet.

Design: William H. Keith, Jr.

Publisher: Gamelords, Inc., 18616 Grosbeak Terrace, Gaithersburg, MD 20879.

The Desert Environment

Another in Gamelord's series of ''environmental'' supplements, this one dealing with deserts. The Desert Environment covers the peculiar problems associated with travel across and survival in a desert climate. Included are specific rules systems for equipment and terrain, as well as guidelines for setting up specific desert situations, encounters, special events, and adventures. Approved for use with **Traveller**.

One sixty-page, 5'' x 9'' booklet.

Design: William H. Keith, Jr.

Publisher: Gamelords, Inc., 18616 Grosbeak Terrace, Gaithersburg, MD 20879.

MINIATURES

Alien Mercenaries

The fourth boxed set of 25mm **Traveller** figures produced by Grenadier Models. The set includes eleven figures, two Aslan, two Vargr, two K'kree, two Droyne, one Hiver, one Ael Yael, and one Virushi (plus extra weapons and equipment). For the last three, this is their first appearance in three-dimensional form. The detailing is excellent, and well up to Grenadier's previous high standards.

Sculptor: John Dennett.

Manufacturer: Grenadier Models, Inc., PO Box 305, Springfield, PA 19064.

MAGAZINES

Dragon

The Ares section of issue number 86 contains Interstellar Athletes, a variant character generation system for **Traveller**. The Ares section of issue number 87 contains Marc Miller's Luna article, part of a series devoted to depicting Earth's natural satellite according to various RPG systems.

Single issues are $3.00 each, and are available from Dragon Publishing, PO Box 110, Lake Geneva WI, 53147.

TRAVELLER NEWS SERVICE

RHYLANOR/RHYLANOR (0306-A434934-F) **Date: 146-1110**

¶ Admiral Lord Santanocheev, who has been out of sight for several months after his relief from command, made a brief appearance today at an Admiralty news conference to announce that regardless of the outcome of the inquiry of his conduct of the war, he intends to retire at the end of the year.

¶ The Admiral declined to answer questions at the end of his short announcement, which was quite unexpected. This is the admiral's first public appearance since his relief from command.

RHYLANOR/RHYLANOR (0306-A434934-F) **Date: 143-1110**

¶ Despite a few minor incidents, the armistice between Zhodani and Imperial forces is holding, and negotiations are proceeding. All reporters have been excluded from the negotiations, at the request of the chief Zhodani negotiator.

¶ No further information is available.

RHYLANOR/RHYLANOR (0306-A434934-F) **Date: 160-1110**

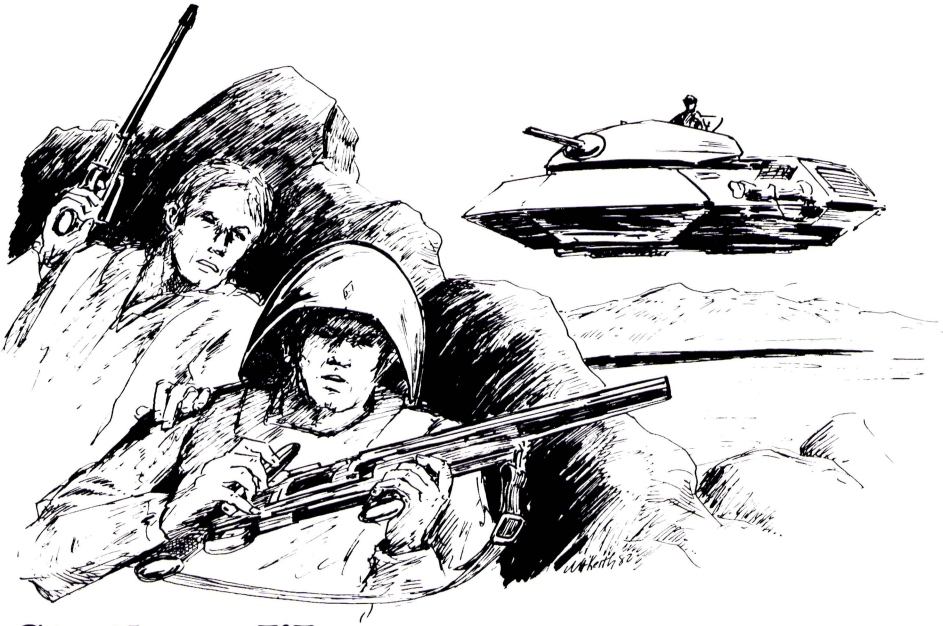
¶ Rumors persist of Zhodani attrocities against citizens of Ruby and Emerald during the recent occupation of those worlds. No first hand accounts of the occupation have been made available, as access to these worlds (indeed, to all worlds occupied during the recent hostilities) is restricted.

DENTUS/REGINA (0601-C979500-A) **Date: 166-1110**

¶ A small force of Vargr raiders today struck an outlying outpost in this system, killing three and wounding another seven. It is believed that the raiders are the remnants of a former military unit, now renegades, since the primary purpose of the raid seemed to be to acquire supplies and spare parts for starships.

¶ A spokesman for the Admiralty stated that such raids are to be expected since a number of Vargr units refused to surrender, and evidently intend to continue hostilities. Forces from Vice-Admiral Elphinstone's command have been detached to run down and destroy the renegades.

Traveller News Service is another Imperium-wide benefit of membership in the Travellers' Aid Society.



Striker Weapons Systems Analysis

The most interesting part of the *Striker* game system is Book 3, containing the design sequences for various weapons systems. This article discusses some of the tactical advantages ("tricks" to you non-military types) that can be gained in the design of equipment using the *Striker* game system.

Vehicles: These are, of course, the main part of any mechanized unit. The designer must consider the cost-advantage, survivability, and offensive effectiveness of each vehicle. For example, a lightly armored APC with a machinegun does not need extensive ECM or heavy radars—that would only present the enemy with a more cost-efficient target. A heavily armored main battle tank (MBT), on the other hand, needs that kind of equipment to survive. Keep in mind also the vehicle's mission. I have seen an APC that carries an entire platoon (50 men) with a frontal armor of four. It is not intended to be shot at—it is a very cost-efficient troop transport that costs only Cr500 per man it carries.

CPR Guns: These are the best, most efficient indirect fire weapon up to tech level 13, where drone missiles take over. Mortars are great for organic indirect support for infantry units, but have too limited a range for high-mobility units like tanks and APC's. For these, large bore weapons with higher velocities should be used. Howitzers are best, since they have a better accuracy, higher rate of fire, and cost less than higher velocity guns. Howitzer ranges are good enough, unless you want good direct fire range also. But mixing artillery weapons and battlefield weapons on the same vehicle is not a suggested tactic anywhere.

The most important statistic of an indirect fire weapon is how much area it can cover in a single fire mission. This is dependent on the rate of fire and the burst size. Don't stray away from larger

bore sizes just because they have low ROF's—believe it or not, the larger burst size makes up for it. Larger bore rounds also have better penetration values, and make laser guided rounds very cost-efficient. The larger the bore, the better (Try it! Make a table with the various bore sizes in one column and the sheaf modifier times the burst size in another). Another word about coverage: cluster bombs (CBM) are the Lord's gift to artillerists. They can cover four times the area of a HE round with higher penetration values — this is another reason to use large bore weapons. CPR's are recommended for use at tech levels 5-7 (see Mass Drivers).

Auto Cannons: Can be used with medium-bore artillery weapons to lower crew requirements and raise ROF's, but an autoloader will do the same job, probably better. Their best use is in the small-bore anti-personnel role for heavy vehicles (why do you think the U. S. Army has a 25mm helicopter chain gun on the new Bradley Infantry Fighting Vehicle?). Simply by raising the velocity by raising the cost a little, you can have an anti-personnel machinegun with the penetration to punch into light emplacements at ranges that are 2-5 times better than machine or gatling guns. Use a 2cm type to keep ammo weight requirements at a minimum. What can an infantryman do when he is being hit effectively at 1-2 kilometers away and his anti-tank weapon is only good at ranges of 500m or closer? These are highly recommended in this role at all tech levels.

Multiple Rocket Launchers: These are not cost-efficient weapons at all. For the cost of two MRL tubes, you could get the same size gun that could fire continuously, rather than waiting ten minutes to be reloaded. Forward observers don't like to wait around ten minutes to call in their second adjustment order. Their best use is to overload point defense weapons, but how are you going to hit the point defense weapon on the first shot anyway? These are not recommended.

Mass Driver Guns: These can be very costly, but the Cr100,000 minimum becomes smoothed over at higher bore sizes. Their main advantage is high ROF's, making a single mass driver worth an entire battery of CPR's if the power is available. The CPR's power requirement necessitates waiting until tech level 9 (when fusion power plants become available) for their use. MDGs are recommended at tech level 9+.

Lasers: Laser weapons are only good when employed on MBT's, and only those with fusion power plants. These advents cause a split in the types of MBT's. On one hand, you have a laser tank whose power plant costs about 1 MCr by itself. So, it becomes cost-efficient to add on the extensive ECM and heavy armor. On the other hand, you have the cheaper, tracked tanks firing tac missiles that can kill that expensive tank (if it sees it—extensive ECM makes visual target acquisition the best). And for the cost of one laser-grav tank, you could get a few platoons of lighter ground tanks. Still, as tech levels advance past 9, the heavier tanks win out. Lasers and laser tanks are recommended at tech level 9, until energy weapons take over the role, but a designer should consider mixing grav tanks with ground tanks in the same unit for cost's sake.

Energy Weapons: These come in at tech level 10, and from that point onwards remain the best main tank weapon. Rapid pulse weapons are not worth the added input—penetration or lightening the power requirement (and therefore making the tank a lot cheaper) are more important. After all, an elite gunner could make the same difference.

Tac Missiles: One of the best anti-tank

weapons. Missiles are cheap, accurate, and light tank-killing weapons, particularly at tech levels 6-9. Missile warheads should not go over 4-5kg. At that point adding an IR follow-up missile will be a better penetration improvement than doubling the missile size. Operator guided missiles are the best for general anti-tank use. Teleguided missiles are good for use against grav vehicles using popups. Small (man-portable) missiles should have target designated guidance to avoid the trouble of transferring guidance packages. Homing missiles are effective when used in large numbers (try putting a dozen homing rail-launched missiles on each MBT to take out those harrassing aircraft and popup sleds!) Target memory missiles are heavy and expensive, but are good to make sure your nukes hit their targets far away. I recommend you use the following at tech levels 6-9, and at tech level 10+ on a limited basis: large numbers of rail-launched homing anti-air missiles (don't forget speed bonuses on +10 or better), wire guided main missiles with IR followups (teleguided at tech levels 9+ for grav vehicles), and target designated missiles for infantry.

Mines: Scatterable mines should be as small as possible—.2kg (2cm) for anti-personnel and about 1kg for anti-tank mines (whatever it takes to get a penetration of 15). Emplaced anti-personnel mines should be flechette type, rather than HE-burst types for two reasons: flechettes cover a bigger area (5cm x 2cm) and can be light-weight, allowing an infantryman to carry more for making hasty defenses and ambush zones. For emplaced anti-tank mines, the bigger the better. Forget non-metallic mines— chemical sniffers make this very cost inefficient. Triggers should all be pressure-type, except for anti-tank mines that are to be used against grav vehicles. Whenever a ground vehicle hits a pressure mine it takes a suspension hit, usually immobilizing it (check the rules!). In general, emplaced mines are better, but that assumes you have the time available.

Aircraft: Like tanks, these come in two types: slow, cheap, and easy to hit types and fast, electronicized, and high-survivable types. Again, it depends on the mission. A transport or cargo plane can be slow and cheap. If your plane is to fly over the battleground, however, don't skimp costs. I try to avoid using them altogether, except for firing long range (15 kilometer+) missiles at a safe distance, or to employ against infantry units. The aircraft design rules leave too many possibilities to discuss here, but do strongly consider the VTOL option or the use of helicopters if speed isn't deathly important. VTOL's have a lot of places to hop down and hide if fired on suddenly. Recommended strongly at tech levels 5-7, until homing missiles come into use. Use with care from tech levels 8 and 9. Consider the enemy's air defense weapons when designing, if you know them.

Conclusion: When designing equipment, compare its offensive capabilities and defensive capabilities (in the case of aircraft and vehicles) to its cost. A good, cheap weapon is often better than a flashier, more expensive novelty. Also keep the battlefield and *Striker* rules in mind when analyzing equipment designs. That's where their true testing lies.

— *Steven P. Drevik*

Vargr Corsair Bands

Within the Imperium, there is a tendency to characterize the Vargr race as an assorted collection of petty states and freebooters, and there is a large body of popular mythology that would have it seem that the Vargr are nothing but pirates and raiders. The myth is as pervasive as distortions of the taming of the American West or the everyday life of a law enforcement officer in much earlier days.

In reality, of course, the corsair bands that operate within the Vargr Extents are nowhere near as pervasive as popular imagery would have us believe. Still, though, the corsairs are a major factor in Vargr society—far more common than the occasional pirate encountered within the Imperium, for example. The fragmentation of the Extents is, of course, partly to blame for this, amid a welter of small states and independent worlds, it is far easier for a corsair vessel to slip out of reach than is true for a gigantic interstellar state such as the Imperium, where despite local freedoms, the Imperial Navy forms a common, ever-present counterweight to freebooters everywhere.

This is not, however, the sole reason for the presence and continued success of pirate bands within the space of the Vargr Extents. The fact is, the corsair bands are symptomatic of the whole Vargr mental outlook. Impulsive, easily talked into independent action by the highly charismatic leaders among them, the Vargr seem to naturally gravitate towards the concept of raiding and other such actions. As long as there are individuals interested in mounting these raids who can attract even a handful of followers, there will be Vargr corsairs, for the Vargr have few checks and balances that could prevent such a leader from doing as he pleases, when he pleases.

When we speak of Vargr corsairs, we

tend to lump them all into one general category. This is another misconception, for Vargr corsairs are complex and varied. As with so many other aspects of Vargr society, it is difficult to speak in generalities of a race which is prone to far more variation in virtually every aspect of their culture than even Humans across space have displayed. The "typical" Vargr corsair band is a myth; there is no such organization. Nonetheless, many bands have some things in common, and it is possible to arrive at a few particular generalizations that will at least be reasonably true for some corsairs in Vargr space.

THE CORSAIR BAND

Vargr corsair groups come in all sizes. There are raiders who get together to crew a single ship, go out raiding, and disperse when the voyage is done. There are also long-standing organizations who rival small Vargr interstellar governments in scope, power, and naval strength. Most, of course, fall somewhere between these two extremes.

The small fry—single ship operations that are mostly composed of "part-timers" in the business for a quick score—can be easily dismissed from consideration. They are nuisances at worst, capturing an occasional merchant ship or raiding a poorly defended world for a comparatively small take. They have no real organization, no permanence, and usually fall prey to government forces, larger corsair bands, or even, at times, their own potential victims, in reasonably short order.

It is the larger, better organized groups—and particularly the very widespread and powerful bands at the upper end of the spectrum—that really make up the corsair bands of popular story. These outfits do have a degree of permanence (as much as any Vargr institution can be said to have, that is), and they are generally very well organized indeed. Each one of the middle-sized bands has a capacity to expand to become one of the major corsair operations, though the outward pull of all Vargr institutions makes it a rare thing for such an event to take place.

As an example of middle and upper range corsair operations, consider the history of one such band, the Kforuzeng of the Firgr subsector, and its interaction with other bands of comparable size.

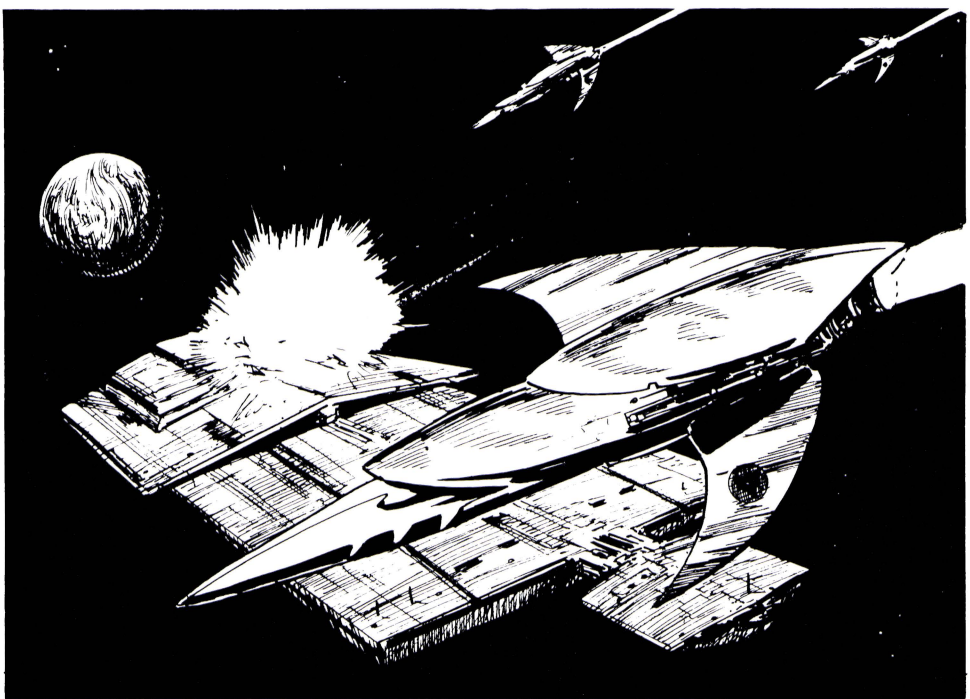
The Kforuzeng have existed for a number of years, originally an amalgamation of a number of small fry who got together to mount a few raids and wound up staying together under the leadership of a highly charismatic ship captain. As success followed success, this first leader built up his authority and organized the band along a fairly typical semi-military structure. The Kforuzeng organization has changed little since that time, though there have been a number of changes of leadership and many shifts in the internal balance of power and authority.

The original Kforuz band had perhaps ten ships, mostly type VP corsairs and similar vessels. As time went on, they absorbed other independents peacefully, as ship captains and crews were attracted to the Kforuz leaders whose charisma, boosted by success in various endeavors, was getting higher all the time. By the time they had doubled from their original size, the Kforuzeng were a fairly far-ranging organization whose operations spanned the Firgr subsector and some adjacent territories.

By this time, the Kforuz could be reckoned as the strongest—but by no means the only—corsair power in the region. The extent of their operations was now to the point where they had to either continue to grow, or collapse under their own weight. This is an important aspect of most corsair opera-

tions. Large bands are so subject to the characteristic splintering of Vargr factionalism that the band must continually gain new successes in order to survive. It is a circular process, for the need for new successes generally requires the band to extend operations further afield, requiring more equipment, new bases of operations, money, and personnel. But the increases in economic commitments and added followers require, in turn, even greater successes.

The Kforuzeng solved this as most growing bands do, by recruiting heavily and organizing mercenary operations to supplement their raiding. Kforuz mercenary units began serving various governments within the Kforuz sphere of influence, and even found employment within the Imperium upon occasion. Like most corsair groups, the Kforuz offered both ground forces and starships for mercenary service, but ships were still at something of a premium. Twenty ships aren't that much to support operations across three complete subsectors and parts of a few others. Nonetheless, the Kforuz leadership displayed quite a bit of ingenuity in making the most of what they had. They ran the Vargr equivalent of a "protection racket" throughout their sphere of influence. By way of example, consider the case of their relations with Tukera Lines, the Imperial megacorporation. Tukera ships crossed the Kforuz sphere to travel to the Thoengling Empire, an important trading partner. Kforuz ships staged several raids on Tukera vessels travelling this route, causing unacceptable losses. Shortly thereafter, a representative of the Kforuzeng approached Tukera with the offer to hire out Kforuz ships to escort the Tukera ships. Tukera agreed, and now pays a subsidy to the Kforuz in exchange for "protection" from piracy in the region. All sides profited; Tukera, no fools they, realized that paying the



Kforuz off would cost less than adding their own escort vessels to the run, while the Kforuzeng profit by earning about as much money without risk as they would have earned by continuing their raiding.

At this stage, the Kforuz could be considered the foremost of the middle-sized corsair bands of the Imperial-Vargr frontiers. Two smaller bands shared the same general sphere—the Aegzaeng and the Uekuez. For a time, the Kforuzeng began coordinating operations with these two groups; then, in a ruthless and rather bloody move, they took over the Uekuez. The takeover was accomplished through an ambush of the Uekuez leadership during negotiations for a joint venture, and was followed up by a ruthless purge which enabled the Kforuzeng to absorb the Uekuez fleet and a few of their lower-echelon personnel, but drove out the majority of the potential leadership. Most Uekuez leaders were either killed or forced to flee with their families out of the Kforuz range entirely; many refugees settled on Jesedipere in the Aramis subsector, under the protection of the Imperium.

A few years later, the Aegzaeng were next. This takeover didn't even require much bloodshed; the Kforuzeng were planning a takeover, many Aegzaeng pulled out early, joining the Uekuez refugees. Others defected to the Kforuzeng voluntarily, earning a place (albeit lower than they had enjoyed before) in the hierarchy of the expanding Kforuz organization. These two takeovers definitely elevated the Kforuz into the realm of a "great power" among corsairs.

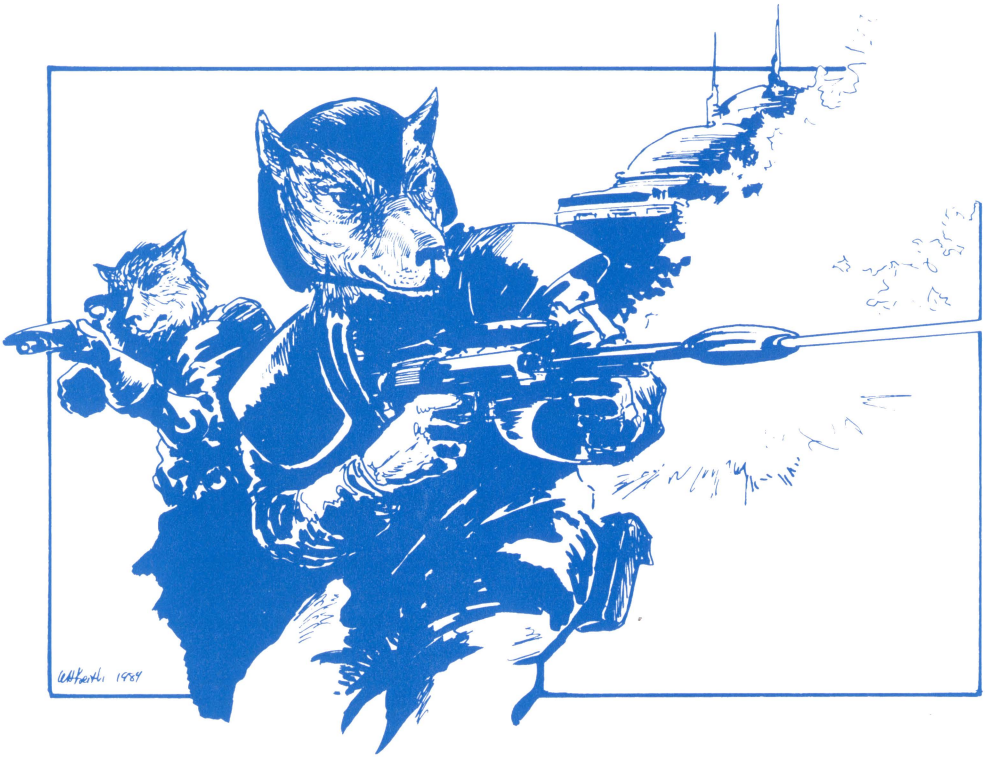
However, the larger the Kforuzeng got, the more distant the leaders were from their followers. This weakened the bonds that normally make corsair bands more stable than governments. The first time the Kforuzeng suffered a major setback, a major shift in organization and power could be expected to follow inevitably. Factions and splinter groups would be sure to emerge. For an overview of the story behind that Kforuz check, see *The Traveller Adventure.*

ORGANIZATION

The usual corsair band is organized along military lines; the larger the band, the more formal the hierarchy. At the height of their power, the Kforuzeng were a far-flung force, with a well-structured organization. Ranks—as given from the Vargr character generation rules—range downward from Leaders (rank 6); there could actually be several "Leaders" of a band the size of the Kforuzeng, but all answerable to the Leader. Leaders head up major operations—raids involving large numbers of ships, some mercenary operations, and so forth.

The next rank down, commodore, is a deceiving one. Usage differs from that commonly assigned to the rank. A commodore could command a squadron of raiders, true, but could equally be found running a corsair base, commanding a mercenary battalion, or even, in the case of the Kforuz officer Dhurgeng, slated to command a single, very large starship.

Group leaders are the ship-captains of the usual corsair hierarchy, while staff majors are generally executive officers to both group leaders and commodores in any of their various roles. Force leaders generally command the ground forces attached to a particular raiding ship, or command companies within a mercenary battalion. Lieutenants, the lowest rank, are found both as shipboard junior officers and as platoon commanders of troops. In actuality, of course, the situation is somewhat more complex, with officers crossing from one area of responsibility to another at need, and many sub-categories of various ranks existing with various specific



duties to perform. This, however, gives a general overview.

Kforuz military forces are organized on the Imperial model. A close parallel would be the structure of the typical Imperial Marine task force, but without some of the more sophisticated elements of these units. See *Journal* #12 for details of the Marine task force; units such as the meson battery, the point defense section, and the nuclear damper section would generally be omitted from such a structure. The Imperial Marine organization was consciously copied by the Kforuzeng because of the flexibility of the force command concept, well suited to the needs of the Corsair mercenary ground units.

At their peak, the Kforuzeng also had at least 35 starships, ranging from 100 tons to 1000 tons in size. Most were built along the lines of type VP corsairs, but there were also merchant vessels, scouts, and even two captured military vessels included in the total. For a time, Kforuz efforts were concentrated on the construction of a very large warship, the Ozarr, which was to be the core of a true fighting fleet and would have elevated the Kforuzeng to pre-eminent status. The Ozarr, was never completed, thanks to the setbacks in the Kforuz plans mentioned above.

EQUIPMENT

Equipment for the Kforuzeng was and is somewhat more standardized, thanks to their superior economic base, than is generally true of most corsair bands. Still, the Kforuz have acquired equipment from a variety of sources, and there are inconsistencies. Combat armor is commonly issued to raiding forces and ship's troops; mercenary combat units are more often equipped with cloth armor. Laser weapons are common, but they are by no means the universal service weapon.

Kforuz mercenaries generally employ G-carriers, air/rafts, and grav platforms (see the Ship's Locker description of the latter), while raiding vessels normally include G-carriers and platforms for ground side raids.

Other equipment appropriate to the role of the particular unit is almost always available. As a general rule of thumb, the Kforuz are equipped to about tech level 10-12 (depending on specific circumstances). When using Book 4, *Mercenary,* to outfit a unit, the guidelines presented there on standard equipment issues at various tech levels can be followed roughly, but, generally, equipment issues will lag about 1 tech level behind those shown in Book 4, and there will be considerable variety in specific weapons and equipment actually available. Also, Vargr corsair units rarely have sophisticated cavalry or artillery arms, relying on speed and surprise rather than combined arms for advantage. Mobility is provided by their ships or by lightly armed vehicles; firepower comes from ships or from local combat forces (for mercenaries). As yet, even the largest Vargr corsair bands are organized as light, mobile infantry.

FINAL NOTES

Vargr corsairs prey equally on whatever targets present themselves—merchants, undefended planets, even, at times, each other. They know no particular limitations regarding race; Vargr corsairs will attack a Vargr ship as willingly as a Human one, under most circumstances. Some Corsair bands show decided preferences, especially the small fry. Single-ship raids are more apt to be aimed at Human interlopers or even across the Imperial frontier, for a number of reasons. First, there is less competition from the big outfits; secondly, small raiding groups are more apt to be embarked on a "spur-of-the-moment" raid, and such raids are often stirred up by opportunities (who see easy pickings along the frontier) or by the occasional fanatic supporter of Kaenguerradz, the doctrine of Vargr racial superiority. As the larger bands are better organized, they spend more of their effort against fellow Vargr than the typical single-shippers, though they still mount raids against Human targets of opportunity as well.

Throughout history, men have shuddered at the coming of raiders and corsairs. Whether it was the barbarian hordes of Attila the Hun, the Vikings gliding out of the sea in their longships, fast-moving Barbary xebecs rowing towards a becalmed merchantman, the deadly raiding vessels of the Sky Raiders or the Reavers of Reavers' Deep, corsairs have had a place, (among their own kind, and among Humans) from the fall of the Vilani Imperium to the days of the Fifth Frontier War. They remain a challenge to be met; but to other Vargr, they remain a symbol of glamour and charisma, a powerful drawing card envied more than hated even by their Vargr victims.

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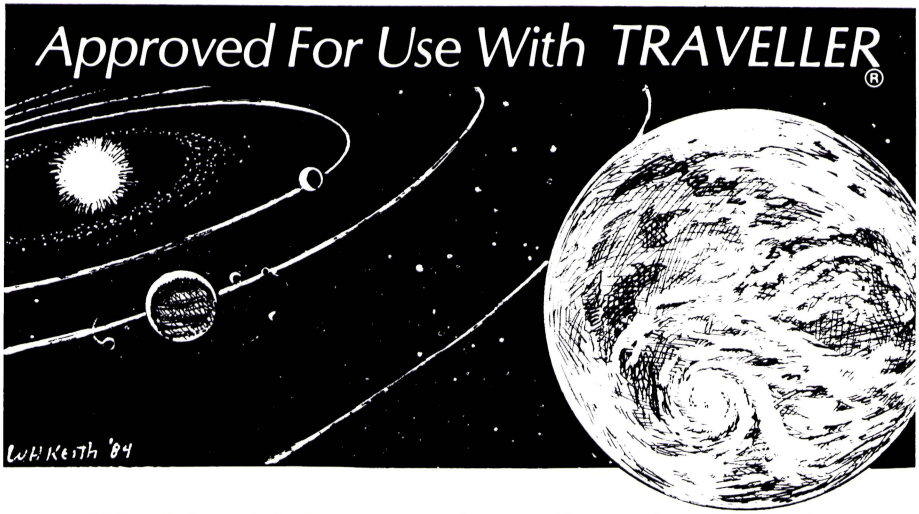

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Missiles in Traveller

The space combat rules of **Traveller** provide for missile racks and missiles as weaponry for starships and spacecraft. Presented here are additional rules about missiles. The intention is to provide a greater usefulness for such weapons in both space combat and role-playing situations.

Missile installations for basic starship designs include four components— the *turret*, the *missile racks*, the *fire control equipment*, and the *missiles* themselves. Each of these components has its own contribution to make to space combat, but only missiles are the subject of this special supplement.

Missile Parameters: Missiles can vary widely in their capabilities as well as in their physical descriptions. It is possible for missiles to be small enough to fit in the hand, or large enough to rival small craft. A standard has been established, however, which allows interchangeability of many different types of missiles and an ease of procurement as well.

Standard missiles must be able to fit into a standardized shipping/launch container. The launch container is fitted directly to the launch rack and the missile is fired from it. The container includes integral test circuitry, provides protection from extremes of temperature and weather, and is isolated from the corrosive effects of atmosphere and moisture.

The standard container is a cylinder with interior dimensions of one meter long and 15 centimeters in diameter. Sealed for safety and security, the containers can be opened and the contents examined, removed or exchanged— an important feature when components are to be custom assembled for specific missile types.

Missile mass varies with the specific type of missile and is the sum of the masses of the missile's components. For convenience, missile mass is used to determine space limitations on missiles. A standard container will hold any missile of 50 kilograms or less; missiles in excess of 50 kilograms are unable to fit in standard missile containers, and thus in standard missile launch racks.

Missile containers each mass 5 kilograms, and are disposed of when the missile is expended.

Missiles which exceed 50 kilograms must be handled in launch bays available under the *High Guard* construction system; they cannot be launched from ordinary turret missile launch racks.

Scale: These rules are written for the standard starship combat scales in **Traveller**, and use those scales. Time is measured in turns of 1,000 seconds (or 16.66 minutes). Distance is measured with 100 millimeters equalling 10,000 kilometers. One G of acceleration for one turn moves an object 100 millimeters.

Tech Levels: The various components of missiles have their tech levels noted in the text. These tech levels are the *standard tech level* for that component and determine on what worlds these components may be manufactured. The primary effect of tech level is on cost.

The credit cost of a component at its standard tech level is shown in the text. At two less than the standard tech level, the cost is 200% of the base price. At one less than the standard tech level, the cost is 150% of the base price. At one

greater than the standard tech level, the cost is 90% of base price. At two or more greater than the standard tech level, the cost is 80% of the base price. Components cannot be manufactured if local tech level is three less than standard tech level.

Non-industrial worlds, for various reasons, cannot manufacture missile components and they are not available on such worlds.

Law Levels: Most missile components are available for purchase at the starport of any world capable of producing them. Some components (specifically warheads) may not be available due to local law level restrictions.

TYPES OF MISSILES

Many different kinds of missiles are possible, but all make use of four basic types of components: a *propulsion system*, a *guidance system*, a *detonation system*, and a *warhead*. A missile is constructed by assembling one of each of the components together. If the resulting missile is less than 50 kilograms, then it can fit in a standard launch rack.

It is always possible to rearrange missile components to produce new types of missiles if they are needed. One gunner can assemble one missile from components (including by disassembling other missiles) in one turn and still be able to fire his turrets weapons during that turn.

Missile Identification: Any missile constructed using the procedures in these rules can be identified by indicating its performance, its propulsion, its guidance, and its detonation systems, its warhead, its mass, and its cost. Each of these components is more fully explained below. If a component is not produced at its standard tech level, then its tech level should be indicated in parentheses.

For example, a typical missile is a 5G5 limited burn, radio sensing, proximity detonator, high explosive warhead missile (all produced at their standard tech level) costing Cr16,200 and massing 50 kg. This price does not take into account tech level effects. At TL 9, this missile costs Cr15,960; at TL 7, it costs Cr31,100.

Propulsion Systems: The propulsion system for a missile moves it toward its target. Movement of the missile within game scale is accomplished by the propulsion system (finer movement control is assumed to be accomplished by smaller course control thrusters which are part of the system).

The capabilities of a propulsion system depend on how the missile is constructed and how much money was spent in producing it. There are three basic propulsion systems: continuous burn, limited burn, and discretionary burn. Each has its own benefits in utility, efficiency, and price.

Propulsion systems are defined by two numbers, commonly separated by a capital G. The first number is the maximum number of Gs which the missile is capable of in a turn; the second is the number of G-burns of fuel the missile can make. For example, a 1G1 propulsion system can accelerate a maximum of 1G per turn, and is capable of burning fuel to achieve 1G once. A 6G6 system can accelerate to a maximum of 6G per turn, and has enough fuel to reach 6G once. A 3G12 system can accelerate to a maximum of 3G in one turn, and has fuel to allow reaching 3G for four turns. This same missile could accelerate at 1G for 12 turns, or 2G for 6 turns.

A selection of basic propulsion systems have been computed for mass and price and are presented in the charts section. Other systems are also possible.

Continuous Burn propulsion systems are solid fuel motors which operate at maximum efficiency when ignited and until their fuel is exhausted. They cannot be turned off once started. They are, however, relatively cheap, and technologically easy to manufacture.

A continuous burn missile must *always* use its maximum acceleration in each turn until its fuel is exhausted. For example, a 3G6 continuous burn missile must accelerate 300 millimeters in its first turn and 300 millimeters in its second turn; thereafter, its fuel is exhausted. Continuous burn systems cannot alter course; they continue on the course given them when fired.

The casing for a continuous burn propulsion system is constucted to withstand the G forces the missile will encounter. It weighs 1 kilogram per G the missile is rated for, and costs Cr100 per kilogram. Fuel weighs 1 kilogram times burns; fuel costs Cr100 per kilogram.

Continuous burn propulsion systems have a standard tech level of 8.

Limited Burn propulsion systems are solid fuel motors which have the fuel segregated into increments, permitting the motors to be turned off and restarted. They are more expensive and still have limitations in their operation.

Limited burn missiles may be launched at less than maximum acceleration, but that acceleration may not be increased or decreased as the missile moves. Its course change potential is one-half the difference between its maximum G rating and its current G rating with fractions rounded down. It may alter its course by its course change potential (times 100 millimeters) in each turn. Fuel for course changes is expended at 2 burns for 1G of change. For example, a 6G12 continuous burn missile could be launched at 4G and would have the ability to change course at 1G (using 2 burns of fuel to do so); it could be launched at 1G and would have the ability to change course at 2G (using 4 burns to do so).

The casing for a limited burn missile weighs 5 kilograms plus 1 kilogram per G the system is rated for. The casing costs Cr200 per kilogram. Fuel for the limited burn missile weighs 1 kilogram per burns (for example, a 4G4 missile has fuel weighing 4 kilograms). Fuel costs Cr100 per kilogram.

Limited burn propulsion systems have a standard tech level of 9.

Discretionary Burn propulsion systems are liquid fuel motors which can vary fuel feed across a wide range, thus allowing fast or slow accelerations as circumstances require.

A discretionary propulsion system allows the missile to maneuver at or below the limits of its propulsion system once launched. Its maneuvers are just like those of a ship or small craft of equal capability.

Discretionary burn propulsion systems casings weigh 10 kilograms plus G in kilograms, and cost Cr2,000 plus G^2 times 100. Fuel weighs 0.4 kilograms per burn; it costs Cr400 per kilogram.

Discretionary burn propulsion systems have a standard tech level of 10.

No System: It is also possible to outfit a missile without a propulsion system. The missile cannot move by itself (although it does take the vector of the ship that launches it), and is a form of drifting mine. Such a missile requires no fuel, but still requires a casing (which serves as a foundation on which the other components are attached). The casing weighs 1 kilogram and costs Cr100. It has a standard tech level of 5.

Varying Payloads: The propulsion systems shown here are designed to power

a 50 kilogram missile. If, once the missile has been assembled, its mass is greater than, or less than, 50 kilograms, then its actual performance will be different.

Determine the ratio of design mass (50 kilograms) and actual mass and multiply it times the missile performance in Gs.

The number of burns available for the missile must be similarly recomputed. Multiply the number of burns in the performance rating by the ratio of design to performance. Use of this ratio may increase or reduce missile performance.

For example, a missile with a 2G10 propulsion system is assembled, and with its warhead, detonation, guidance systems is found to mass 40 kilograms. The ratio 50:40 (reduced to 10:8, or 120%) is multiplied by the G rating of the missile, to produce a new G rating of 2.4; the number of burns is similarly recomputed by multiplying 120% times 10, to produce a new rating of 12.

Guidance Systems: Guidance systems provide the controlling pulses which carry a missile to its target.

Guidance systems are composed for two components: a *controller* and a *sensor* assembly.

Controllers provide course adjustments and correction signals to the propulsion system. The controller can function with any propulsion system. Controllers mass 3 kilograms and cost Cr300. Standard tech level is 9.

The *sensor* assembly provides input to the controller. It detects information and provides it to the controller.

Radio Receiver: The most versatile of the sensors is the radio receiver. It may be used for a variety of seeking methods which include external guidance, active homing, and passive homing. A radio receiver masses 1 kilogram and costs Cr400. Standard tech level is 8.

With external guidance, the missile is directed by radio waves from the launching ship. The radio sensor receives guidance signals from the launching ship and forwards them to the controller, which then directs the propulsion system.

With passive homing, the radio receiver senses radio emissions from the target and uses them to guide the missile to it.

With active homing, the launching ship broadcasts radio (or radar) and the radio receiver on the missile senses reflections of them from the target and allows the missile to home on them.

Infrared Sensor: The infrared sensor allows the controller to react to heat emissions from the target and to home in on them. An infrared sensor masses 1 kilogram and costs Cr800. Standard tech level is 9.

Mass Sensor: The mass sensor allows the controller to react to the mass of the target and to home in on it. A mass sensor masses 1 kilogram and costs Cr1,000. Standard tech level is 10.

Neutrino Sensor: The neutrino sensor allows the controller to react to neutrino emissions from the target's power plant and to home in on them. A neutrino detector masses 4 kilograms and costs Cr1,000. Standard tech level is 11.

In practice, all of the sensors work in concert when the missile is operating in the homing mode. The controller reacts to all sensor input and guides the missile to the location where the preponderance of evidence shows the target to be.

Other sensors are possible and can be produced, but they are not standard installations. For example, an occultation sensor can be set to memorize local star fields and to react when a target passes in front of the memorized field. Or, an emis-

sion sensor can be set to detect ionized particles, gases, or pollutants emitted by potential targets. Inertial sensors can determine and calculate movement by the missile and allow the controller to move the missile to a specific pre-selected location, there to explode or to wait for a target.

Detonation Systems: Detonation systems are a specialized (and distinct) part of the guidance system which determines when to explode the missile's warhead.

Detonation systems determine when the warhead will explode and under what circumstances. Basic detonation systems are *contact, proximity, intelligent,* and *command.*

Contact Detonators trigger the warhead when the missile actually rams or collides with the target. They are indiscriminating, and so function whether or not the ship they hit is the intended target. A missile which explodes in contact with its target inflicts double the normal number of hits. Each masses one kilogram. A contact detonator requires impact with the target rather than simply intercept it. Base Price: Cr100. TL 5.

Proximity Detonators trigger the warhead when the missile intercepts the target; impact is not required. They can be countered by ECM (Electronic Counter Measures) programs in the target ship's computer. Base Price: Cr500. TL 6. Mass: 1kg.

Intelligent Detonators utilize electronic circuits to recognize patterns, circumstances, and strategies of the target, and to counteract them. While not sentient, they are sophisticated and can overcome ECM by the target. Base Price: Cr1,000. TL 8. Mass: 1kg.

Command Detonators trigger the warhead on a signal from the launching ship. The missiles they are installed on must have a radio sensor. When the missile intercepts its target, the controlling gunner may detonate the warhead in proximity to the target and inflict the standard number of hits. If the missile impacts the target, the warhead may be detonated in contact, inflicting double the standard number of hits. Command detonators are detonated out of range of damage by successful ECM. Command detonators are subject to range attenuation due to radio communications lag: if more than three meters (one light-second) from the launching ship, throw 2+ for the missile to respond to the detonation command; DM – 1 per light-second distance, DM – 3 if attempting to detonate in contact. If unsuccessful, the detonation command may be re-sent in the next game turn. Base Price: Cr200. TL 7. Mass: 1kg.

Warheads: Warheads contain the payload for the missile; they are generally an explosive charge. In some cases, the payload may be non-explosive, or even non-weapon in nature.

Warheads vary by size and type of explosive. Five basic types of explosive are available: *high explosive, focussed force explosive, nuclear, enhanced radiation,* and *fusion.*

High Explosive is simple chemical explosive. It creates an blast effect which works best when in contact with the target. Chemical blast explosive warheads are produced in a 10 kilogram basic size. Larger charges can be produced by assembling more than one charge in a missile. The chemical explosive warhead produces 2 hits. Base Price: Cr500. TL 6.

Focussed Force Explosive is high explosive which directs the blast toward the target, thus reducing wasted blast effect. It is an evolution of shaped charge technology. Focussed force explosive is produced in 10, 20, and 30 kilogram

charges; because of the nature of the focussed force process, separate charges cannot be combined in a missile assembly. The focussed force warhead produces 4 hits per ten kilograms of explosive. Base Price: Cr1,000 for 10 kilogram charge, Cr2,000 for 20 kilogram charge, and Cr3,000 for 30 kilogram charge. TL 9.

Nuclear Explosive produces blast through nuclear fission. Some radiation effects are also produced. Nuclear warheads mass 30 kilograms, but can be acquired in various yields ranging from 0.1 kiloton to 10 kilotons. A nuclear warhead produces 10 hits per 0.1 kiloton of yield, and also produces 2 radiation hits per 0.1 kiloton of yield. Base Price: Cr1,000,000 per kiloton yield. TL 8.

Enhanced Radiation warheads produce minimal blast but greater amounts of radiation. Enhanced radiation warheads mass 20 kilograms, but can produce equivalent yields of 0.1 kiloton to 10 kilotons. An enhanced radiation warhead produces 8 hits on the radiation table per 0.1 kiloton of yield. If detonated in contact with the target, it will produce 5 hits per 0.1 kiloton of yield; if not in contact, there are no ordinary hits produced. Base Price: Cr1,000,000 per kiloton yield. TL 9.

Fusion Warheads release great amounts of energy through hydrogen fusion. Those below standard tech level require a fission trigger (0.1 kiloton yield) while those at standard tech level and above achieve fusion by other means. They inflict 10 damage hits and 2 radiation hits per 0.1 kiloton of yield. Below standard tech level, there is a minimum yield of 0.2 kilotons. Base Price: Cr1,000,000 per kiloton yield (at tech level 8 there is a Cr100,000 surcharge for the fission trigger; at TL 9, there is a Cr90,000 surcharge for the fission trigger). TL 10. Mass: 20 kilograms (40 kilograms if below tech level 10).

MISSILE STORAGE

Each standard missile rack can hold one missile ready to fire and two additional missiles ready for future game turns. The role of the gunner in the turret is to aim and fire the weaponry in the turret; once the missile racks and ready missiles are exhausted, the gunner must reload them with new missiles. A gunner can load new missiles into the racks and still operate the weaponry in a game turn.

The standard turret has room to store an additional 12 missiles in it. Once these missiles have been used, the turret must be restocked with missiles carried elsewhere in the ship (usually in the cargo hold).

Restocking a turret with missiles is accomplished during the game turn interphase. If the gunner participates in restocking, he may not operate weaponry in the turret in the next game turn. It is possible for non-gunner crewmembers who are not otherwise engaged to perform restocking instead. One person can restock a turret in one game turn.

MISSILE MOVEMENT

Missiles move using the same vector movement system that is used for ships. The procedures are the same except that the player must monitor the available fuel for the missile, and it may not maneuver once it exhausts that fuel supply.

Continuous burn missiles begin at maximum acceleration and continue to operate at maximum acceleration until fuel is exhausted. They may not maneuver if their target moves or changes course. Consequently, continuous burn missiles are most effective if fired against targets which can be intercepted during the first phase of movement. For example, a 6G6 missile can intercept a target within 600 millimeters

of its launch point during its first turn of movement. Chances of interception in subsequent turns are much less.

Limited burn missiles may be launched at less than maximum acceleration, but that acceleration may not be increased or decreased as the missile moves. They may change course within certain limits, allowing interception of some maneuvering targets. Limit burn missiles are a compromise between the low cost of continuous burn missiles and the efficiency of discretionary burn missiles.

Discretionary burn missiles function in the same manner as spacecraft, but their fuel consumption must be monitored.

Unpowered missiles may not maneuver, although their courses are affected by gravity. They do have a vector given them by their launching ship, and they continue to move using that vector.

Effects of Gravity: Gravity functions constantly and affects the courses of missiles in the normal manner.

Interception: A missile intercepts a target if it passes within 25 millimeters of that target. Within 25 millimeters of the target is close enough to activate proximity detonators and for any warhead to affect the target.

Because of the scale being used, the distance of 25 millimeters from the target is measured from a single point on the target which is located at the head of its vector arrow.

Referee's Note: For reasons of scale and convenience of play, the distance of 25 millimeters has been selected to indicate a distance at which a missile intercepts a target. In actuality, the sophisticated systems aboard the missile would produce interceptions at ranges of several hundred meters.

Impact: Actually impacting a target (as opposed to intercepting) requires maneuverability on the part of the missile. Any powered missile will impact the target on the first turn of movement; initial guidance by the launch racks is sufficient in this case. In subsequent turns, continuous burn missiles can intercept, but will not impact. Limited burn and discretionary burn missiles can impact if they are able to plot a vector which passes through the target.

Range Band Movement: If the range band movement system for space craft is being used instead of the vector movement system, then missile movement must be adjusted to correspond to that system. Missile movement is determined by acceleration possible, and fuel is expended when the missile accelerates.

Continuous burn missiles cannot hit if they do not intercept on the first turn of movement.

Limited burn missiles cannot hit if they do not intercept on the first three turns of movement. On turns of movement after the first, throw 4+ for the missile to intercept the target and allow DM+remaining fuel on the throw.

Discretionary burn missiles are maneuvered in exactly the same manner as ships.

MISSILE COMBAT EFFECTS

Missiles which intercept the target in the movement phase and which then survive anti-missile fire and ECM can detonate. When a missile detonates, it inflicts hits on the target based on its detonator system, its warhead, its velocity vector, and its distance.

Warheads: The specific warhead type determines the base number of hits which a missile can inflict on the target. This number can be increased or decreased through

the influence of other factors.

The base hit numbers for warheads are given in the missile components table.

Detonators: Detonators determine when and how effectively a warhead explodes. Contact detonators function only when the missile hits the target; they double the base number of hits. Proximity detonators function when the missile intercepts the target but before contact occurs; they do not alter the base number of hits. Intelligent detonators function the same as proximity detonators, but are not affected by ECM. Command detonators are triggered by the gunner and may operate as either proximity or contact detonators; command detonators are reduced in effectiveness by distance.

Velocity Vector: If a missile contacts its target and the sum of the vectors of the missile and the target is greater than 300 millimeters, then one extra hit on the hit location table is allowed for each 300 millimeters of vector length. Ignore fractions remaining when dividing the vector by 300 millimeters.

Counter Measures: A target may adopt counter-measures against a particular type of missile.

Passive radio homing missiles cannot be launched against a target which is not broadcasting radio. A target is assumed to be not broadcasting radio if it has not fired active radio homing missiles, has not fired missiles equipped with command detonators, is not communicating by radio with other ships or bases, is not externally guiding missiles, and is not using radar. Missiles fired against a ship which then ceases such operations continue on their last plotted vector.

Heat seeking (IR homing) missiles of less than base tech level will shift their target to any hotter object which presents itself, including the local star.

Neutrino seeking missiles cannot track craft without power plants such as missiles, or ships which have turned off their power plants.

Mass seeking missiles sometimes cannot differentiate between a mass and background masses. At less than standard tech level, a mass seeking missile will be unable to intercept a target which is located on a world or planet. At standard tech level or less, a mass seeking missile will be unable to intercept a target located on a nickel-iron asteroid at least three times larger than the target. At higher than standard tech level, a mass seeking missile can properly differentiate and lock onto a target, regardless of background.

Inflicting Damage: For each hit which a missile produces, roll once on the hit location table. Most warheads use the basic hit location table. Nuclear warheads inflict hits on both the basic hits table and the radiation damage table. Radiation warheads inflict hits on the radiation damage table.

The damage (or hit) tables from **Traveller** are used. In addition, a radiation damage table is presented in the chart set to allow implementation of radiation hits. Radiation affects only crew, computers, and weaponry. The sudden burst of radiation can cause crew casualties, incapacitate a computer, or incapacitate weaponry circuits making the weapons inoperable. If a ship's computer has a fiber optic backup system (explained in *High Guard*), then the computer is immune to radiation hits.

ECM: Electronic Counter Measures programs may fool or disorient a missile, forcing it to explode prematurely, or without effect, or to fail to explode. ECM requires an ECM program running in the target ship's computer and can affect any missile which intercepts the ship. ECM takes place during the laser return fire phase and before the missile has an opportunity to detonate.

ECM affects any missile which is operating with a radio sensor. Throw 9+ for the ECM to be successful. If successful, most missiles will fail to explode, and instead continue on their course; they are incapacitated and cannot be guided or used further by their launching ship.

An ECM incapacitated missile may still do damage to the target. Any ECM incapacitated missile which has sufficient velocity vector to qualify for hits (if vector is at least 300 millimeters long) will still inflict those hits if the target is hit. Any ECM incapacitated missile which is on its first turn of movement will still impact the target.

Any contact detonator will still function if the target is contacted. Proximity, intelligent, and command detonated warheads will explode at sufficient range from the target to assure no target damage is done.

Sand Effects: Any missile which passes through sand may be incapacitated by that sand. For each 25 millimeters of sand that a missile passes through, throw 12+ for the missile to be incapacitated by it. If incapacitated, the missile ceases to function.

NON-MILITARY MISSILES

Missiles can be assembled with payloads that do not serve a strictly military function. Examples of such missiles include illumination or signal missiles, message torpedoes, and remote sensor drones.

Illumination missiles are fitted with a bright flare warhead (usually chemical in nature), a radio sensor, and a command detonation system. The purpose is to create a bright visual signal for some purpose— communication with a planetary surface, momentary illumination of a location, or even as a diversion. Illumination missiles which illuminate in the radio or the infrared spectrum are also possible; they use special illumination payloads at the same cost and mass as the ordinary type.

An illumination payload is capable of producing an extremely bright light for the period of one game turn. The process destroys the missile. The payload masses 10 kilograms and has a base price of Cr1,000. Standard tech level is 6.

Message Torpedoes carry physical messages, materials, equipment, or samples from one location to another. Their payload section is a compartment which holds the items securely. They also carry a radio sensor and a controller.

A message torpedo payload masses 10 kilograms and costs Cr100 at tech level 5.

Remote Sensor Drones carry sensor equipment for remote operations. The specific sensor equipment must be placed in a custom produced payload assembly. The assembly costs Cr500 plus the cost of the instrumentation and can be produced at the tech level of the instrumentation.

BUDGETING

Because missiles are expended when fired, they must be replaced as soon as possible if a ship is to be fully prepared for every possible contingency. Two specific methods of handling this situation are possible.

The most direct method is to purchase missile components and to maintain a record of all components purchased. When missiles are fired, they are taken from this inventory list and marked as expended. When components are acquired, they are added to this list.

A less specific method is to maintain a running credit balance in a missile

component assembly account. The referee can assume that player characters may draw any appropriate standard component assembly from the account when and where needed. Restocking the account can take place at any starport where components can be purchased. If this method is used, all missile components expended should be considered at standard price and tech level. Restocking can only take place at worlds which meet standard tech level requirements. In addition, the fund cannot be converted to cash again except at a 50% discount (to account for trying to sell less than new missile components).

FIRE WHEN READY

These missile rules provide additional material for the referee and the players to produce missiles that meet their needs in **Traveller** campaigns. These rules add complexity, but they also add flavor to almost any **Traveller** space combat situation.

In addition, they add a further degree of information for the players who are role-playing with their characters in the course of a space battle by indicating procedures and considerations which come into force for the individuals involved in ship to ship combat.

REFERENCES

The following are inportant references for use in conjunction with this special supplement.

Starter **Traveller** (GDW: 1983).
Starships, **Traveller** Book 2 (GDW: 1981).
The **Traveller** *Book (GDW: 1982).*
High Guard, **Traveller** Book 5 (GDW: 1980).
Trillion Credit Squadron, **Traveller** Adventure 5 (GDW: 1981).

Traveller
Special Supplement 3 — Missiles

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This special supplement for **Traveller**® originally appeared in the *Journal of the Travellers' Aid Society*®, No. 21, and is intended to amplify and elaborate certain rules and concepts in the **Traveller** role-playing system. **Traveller** and *Journal of the Travellers' Aid Society* are registered trademarks of Game Designers' Workshop, Inc.

This special supplement was designed by Marc W. Miller.

GAME TURN SEQUENCE

Intruder Player Turn—

A. Intruder Movement. The intruder moves his ships using the movement and gravity rules. Missiles and sand launched in previous game turns also move.

B. Intruder Laser Fire. The intruder may fire his ship's laser weaponry at enemy targets. Only laser weaponry may fire in this phase.

C. *Native* Laser Return Fire. The native may return fire with his laser weaponry at enemy ships which have fired on him, provided his return fire computer program is running during this phase, and in accordance with the computer program and combat rules. Anti-missile laser fire may be performed in this phase if the appropriate computer program is running. ECM programming operates and may destroy close enemy missiles. Missiles passing through sand may be incapacitated.

D. Intruder Ordnance Launch. Precise missile types (indicating specific assemblies included in the missile) are designated prior to launch. Missiles are launched on specific missions against designated targets by the intruder, subject to the applicable rules. Sand is launched. Missile racks and sandcasters are reloaded if necessary and missiles or sand are available. Missiles which intercepted targets detonate, with blast and/or radiation effects. Lifeboats and ship's vehicles are launched.

E. Intruder Computer Reprogramming. The intruder may remove computer programs from his on-board computer and input others in anticipation of later needs.

Native Player Turn—

A. Native Movement. The native moves his ships using the movement and gravity rules. Missiles and sand launched in previous game turns also move.

B. Native Laser Fire. The native may fire his ship's laser weaponry at enemy targets. Only laser weaponry may fire in this phase.

C. *Intruder* Laser Return Fire. The intruder may return fire with his laser weaponry at enemy ships which have fired on him, provided his return fire computer program is running during this phase, and in accordance with the computer program and combat rules. Anti-missile laser fire may be performed in this phase if the appropriate computer program is running. ECM programming operates and may destroy close enemy missiles. Missiles passing through sand may be incapacitated.

D. Native Ordnance Launch. Precise missile types (indicating specific assemblies included in the missile) are designated prior to launch. Missiles are launched on specific missions against designated targets by the native, subject to the applicable rules. Sand is launched. Missile racks and sandcasters are reloaded if necessary and missiles or sand are available. Missiles which intercepted targets detonate with blast and/or radiation effects. Lifeboats and ship's vehicles are launched.

E. Native Computer Reprogramming. The native may remove computer programs from his on-board computer and input others in anticipation of later needs.

Game Turn Interphase—

The end of one game turn is marked. All non-player items such as planets, worlds, and satellites move in accordance with the rules. Turrets may be restocked with missiles and sand moved from cargo storage locations by the gunner or by other crewmembers. Other miscellaneous activity may also be necessary. The game then proceeds to the movement and combat of the next game turn.

CONTINUOUS BURN PROPULSION SYSTEM

Burns	1G		2G		3G		4G		5G		6G	
1	2	200	4	600	6	1,200	8	2,000	10	3,000	12	4,200
2	3	300	6	1,000	9	2,100	12	3,600	15	5,500	18	7,800
3	4	400	8	1,400	12	3,000	16	5,200	20	8,000	24	11,400
4	5	500	10	1,800	15	3,900	20	6,800	25	10,500	30	15,000
5	6	600	12	2,200	18	4,800	24	8,400	30	13,000	36	18,600
6	7	700	14	2,600	21	5,700	28	10,000	35	15,500	42	22,200
7	8	800	16	3,000	24	6,600	32	11,600	40	18,000	48	25,800
8	9	900	18	3,400	27	7,500	36	13,200	45	20,500	54	29,400
9	10	1,000	20	3,800	30	8,400	40	14,800	50	23,000	60	33,000
10	11	1,100	22	4,200	33	9,300	44	16,400	55	25,500	66	36,600
11	12	1,200	24	4,600	36	10,200	48	18,000	60	28,000	72	40,200
12	13	1,300	26	5,000	39	11,100	52	19,600	65	30,500	78	43,800

LIMITED BURN PROPULSION SYSTEM

Burns	1G		2G		3G		4G		5G		6G	
1	7	1,300	9	1,800	11	2,500	13	3,400	15	4,500	17	5,800
2	8	1,400	11	2,200	14	3,400	17	5,000	20	7,000	23	9,400
3	9	1,500	13	2,600	17	4,300	21	6,600	25	9,500	29	13,000
4	10	1,600	15	3,000	20	5,200	25	8,200	30	12,000	35	16,600
5	11	1,700	17	3,400	23	6,100	29	9,800	35	14,500	41	20,200
6	12	1,800	19	3,800	26	7,000	33	11,400	40	17,000	47	23,800
7	13	1,900	21	4,200	29	7,900	37	13,000	45	19,500	53	27,400
8	14	2,000	23	4,600	32	8,800	41	14,600	50	22,000	59	31,000
9	15	2,100	25	5,000	35	9,700	45	16,200	55	24,500	65	34,600
10	16	2,200	27	5,400	38	10,600	49	17,800	60	27,000	71	38,200
11	17	2,300	29	5,800	41	11,500	53	19,400	65	29,500	77	41,800
12	18	2,400	31	6,200	44	12,400	57	21,000	70	32,000	83	45,400

DISCRETIONARY BURN PROPULSION SYSTEM

Burns	1G		2G		3G		4G		5G		6G	
1	12	2,260	13	2,720	15	3,380	16	4,240	17	5,300	19	6,560
2	12	2,420	14	3,040	16	3,860	18	4,880	19	6,100	21	7,520
3	13	2,580	15	3,360	17	4,340	19	5,520	21	6,900	24	8,480
4	13	2,740	16	3,680	18	4,820	21	6,160	23	7,700	26	9,440
5	13	2,900	16	4,000	19	5,300	22	6,800	25	8,500	28	10,400
6	14	3,060	17	4,320	21	5,780	24	7,440	27	9,300	31	11,360
7	14	3,220	18	4,640	22	6,260	26	8,080	29	10,100	33	12,320
8	15	3,380	19	4,960	23	6,740	27	8,720	31	10,900	36	13,280
9	15	3,540	20	5,280	24	7,220	29	9,360	33	11,700	38	14,240
10	15	3,700	20	5,600	25	7,700	30	10,000	35	12,500	40	15,200
11	16	3,860	21	5,920	27	8,180	32	10,640	37	13,300	43	16,160
12	16	4,020	22	6,240	28	8,660	34	11,280	39	14,100	45	17,120

In each column, the left number is mass of the missile propulsion assembly in kilograms; the right number is the cost of the propulsion assembly in credits.

The prices shown are base prices at standard tech level.

SCALE

Time: Each game turn is 1,000 seconds (about 16.6 minutes).

Space: One millimeter equals 100 kilometers; 1:100,000,000. Three meters equal one light-second.

Thrust: 1G vector equals 100 millimeters. 1,000 seconds of acceleration at 1G produces a velocity change of 10,000 kilometers (or 100mm in scale).

Units: Individual starships, non-starships, small craft and missiles.

TECH LEVEL EFFECTS

Tech Level	*Price*
Standard TL – 3	not available
Standard TL – 2	200% of base price
Standard TL – 1	150% of base price
Standard TL	base price
Standard TL + 1	90% of base price
Standard TL + 2 +	80% of base price

Non-industrial worlds cannot produce missile components and they are not available.

LAW LEVELS

Law levels have no effect except for warheads. Nuclear, fusion, and enhanced radiation warheads are illegal at law levels 4 + ; all warheads are illegal at law levels 8 + .

PROPULSION RATING SYSTEM

Missile propulsion systems are rated by their acceleration potential and their endurance using two numbers separated by a G (for example, 5G5).

The first number is the maximum G acceleration possible for the missile. The second number is the number of burns possible for the missile, expressed so that one burn will accelerate the missile at 1G for one turn.

Example: 5G5 indicates the missile can reach a maximum 5G acceleration, and which has enough burns to do so for one turn.

MISSILE COMPONENT ASSEMBLIES

Component Type	*Mass*	*TL*	*Credits*
Controller	3 kg	9	300
Radio Sensor	1 kg	8	400
Infrared Sensor	1 kg	9	800
Mass Sensor	1 kg	10	1,000
Neutrino Sensor	4 kg	11	1,000
Contact Detonator	1 kg	5	100
Proximity Detonator	1 kg	6	500
Intelligent Detonator	1 kg	8	1,000
Cmd Detonator	1 kg	6	200
High Explosive	10 kg	6	500
Force Focussing	10 kg	9	1,000
Force Focussing	20 kg	9	2,000
Force Focussing	30 kg	9	3,000
Nuclear Warhead	30 kg	8	*
Enhanced Radiation	20 kg	9	*
Fusion Warhead	20 kg	10	*

*Fission, Fusion, and Enhanced Radiation warheads may be acquired in yields of 0.1 to 10 kilotons at a cost of MCr1 per 0.1 kiloton.

PROPULSION SYSTEM COSTS

The formulae below compute credit cost and mass for propulsion systems.

Casing **Continuous Burn** *Fuel*

$M_C = G$ $M_F = B$

$C_C = 100M_C$ $C_F = 100GM_F$

Casing **Limited Burn** *Fuel*

$M_C = 5 + G$ $M_F = B$

$C_C = 300M_C$ $C_F = 200GM_F$

Casing **Discretionary Burn** *Fuel*

$M_C = 10 + G$ $M_F = 0.4B$

$C_C = 2000 + 100G^2$ $C_F = 400M_F$

Casing **No Propulsion** *Fuel*

$M_C = 1$ $M_F = 0$

$C_C = 100$ $C_F = 0$

G: Gravities acceleration. B: Burns of fuel. C_F: Fuel Cost in credits. C_C: Casing Cost in credits. M_C: Casing Mass in kilograms. M_F: Fuel Mass in kilograms. Payload will vary missile performance.

INTERCEPTION

A missile intercepts its target if it passes within 25 millimeters of the target.

ECM EFFECTS

Throw 9+ for an operating ECM program to affect an intercepting radio sensor missile during the Laser Return Fire Phase.

Intelligent detonators are immune.

Command and proximity detonators explode harmlessly.

Ccontact detonators still function.

Missiles on their first turn of movement still impact the target. Velocity hits can still occur.

SAND EFFECTS

For each 25 millimeters of sand which a missile passes through, throw 12+ for the missile to become incapacitated. An incapacitated missile ceases to function.

VELOCITY COMBAT EFFECTS

If the sum of the vectors of the missile and the target exceeds 300 millimeters in length then one extra hit is allowed for each 300 millimeters of vector length. Ignore fractions when dividing the vector by 300 millimeters.

RADIATION DAMAGE

Two Dice	*Starship*	*Non-Starship*	*Small Craft*
2	Crew	Crew	Crew
3	Crew	Crew	Crew
4	Computer	Crew	Crew
5	Computer	Computer	Crew
6	Computer	Computer	Crew
7	No Effect	Computer	Crew
8	Computer	Computer	Computer
9	Crew	Crew	Computer
10	Turret	Turret	Turret
11	Turret	Turret	Turret
12	Turret	Turret	Turret

Fiber Optic computers are immune to computer hits on this table.

Missiles are hit on the small craft column with DM −3 (crew hits are treated as sensor destroyed; computer hits are treated as controller destroyed; weapon hits are treated as warhead detonated).

Crew Hits inflict 4D hits on one crew member determined randomly.

MISSILE IDENTIFICATION

Identify each missile by stating its performance, its components (and their tech levels if non-standard), and its mass and cost.

Performance, propulsion, guidance and detonation systems, warhead, mass, and cost.

COMBAT EFFECTS

Warheads produce hits; detonators may alter hits produced; velocity produces hits.

High Explosive: 2 hits per 10 kilograms.

Focussed Force: 4 hits per 10 kilograms.

Nuclear Explosive: 10 hits per 0.1 kiloton yield, plus 2 radiation hits per 0.1 kiloton yield.

Enhanced Radiation: 8 radiation hits per 0.1 kiloton yield. 5 hits per 0.1 kiloton yield if in contact with the target.

Fusion Warhead: 10 hits per 0.1 kiloton yield, plus 2 radiation hits per 0.1 kiloton yield.

Contact Detonator: Doubles hits produced by warhead.

Proximity Detonator: No effect on hits.

Intelligent Detonator: No effect on hits.

Command Detonator: Doubles hits produced by warhead detonated in contact.

This special supplement amplifies and elaborates certain facets of missiles and their use in ***Traveller®*** *. It originally appeared as a pull-out section in the* Journal of the Travellers' Aid Society® *, issue number 21.*

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Contact: The Girug'kagh

Within the bounds of the Two Thousand Worlds, there are a number of races subject to the K'kree. Such races are collectively known as "kr'rrir"—literally "Subjects"—and have been forced to adapt their cultures to conform to standards imposed by their K'kree overlords. One such race is commonly known as the Girug'kagh, the name applied to them by the K'kree.

The Girug'kagh originally called themselves the Savezitaisoh, and are native to a world they knew as Saviztah, but which the K'kree now call Kagh'kir (Kirarurr!ka 0809 6889(5)(4)-D). They are roughly humanoid—upright bipeds, homeothermic, standing 1.5 meters tall and generally hairless, with a faint scaling always visible. Scales are dyed in various colors to indicate rank and status through patterns of different sorts, a point of great pride to the Savezitaisoh people and one of their few links with the past.

The hands have long, delicate fingers; the seven digits include three grasping fingers that are mutually opposable to all the other digits, and four shorter, stubbier, thumb-like members. Physically, the race is undistinguished; mentally they seem subservient, easily cowed, and almost totally without spirit. Some have gone so far as to describe them as a slave race.

HISTORY

The Girug'kagh are descended from omnivore/gatherer stock which lived in the coastal plains of their homeworld. They developed intelligence in the face of changing climate and an increased competition for food collected from shoreline tidal pools and the nests of burrowing animals which dwelt along the coastal cliffs. Cooperation proved essential in the face of threats from several species of amphibian or shore dwelling carnivores, and the combination of in-

telligence and group cooperation led eventually to the rise of civilization. The race had attained a tech level of 2 when the K'kree first came across them.

They were only the third non-K'kree race to be contacted by the militant vegetarians of Kirur. The K'kree interdicted the world for quite some time, while a debate over the fate of the newly discovered primitives was held. It was eventually decided that there was some hope that the Girug'kagh, who foraged for such food as they could find and had already developed a flourishing agricultural base, might not need to be destroyed as meat-eaters, and the K'kree offered them the option of adopting new ways or facing certain destruction at the hand of their technological superiors.

To the primitive Girug'kagh of that time, the K'kree were little short of gods. It is doubtful that they understood what was being asked of them at the time, but K'kree dictates on diet, conduct and other modifications in culture were accepted as teachings from heaven, and widely embraced (a similar development can be seen in "cargo" cults of Melanesia, on Terra). Those who failed to adapt to the new ways gradually died away in the course of several generations of planetary development under the guidance of K'kree governors.

The Girug'kagh were eventually deemed ready to enter the mainstream of society in the Two Thousand Worlds, and were granted full subject status nearly four thousand years ago. Subject status conferred a limited autonomy—self-rule, the right to travel to other worlds and be visited by K'kree ships and/or those of other subject races, and so forth. By this time, the race had evolved a culture which was highly artificial, forced upon it from above rather than naturally developed from within. A certain degree of cultural shock had left the Girug'kagh unable to realize their original potential as a civilized people.

SOCIETY

There are few remnants now of the pre-K'kree ways of the Girug'kagh. Their language is all but dead (though there has been, over the past century or so, a definite effort to revive the old tongue and keep it—and the native literature and poetry it was used for—from passing away forever). Most social customs have arisen out of the K'kree dominance. Vegetarianism, of course, is the most essential part of life.

The Girug'kagh have been instilled with an absolute conviction that they are second-class citizens, utterly inferior in all things to their K'kree overlords. A Human missionary from the Imperium attempted once to persuade these people to strike off their chains and realize that they were as good as anyone else, and was not only unsuccessful but deported for his efforts; the Girug'kagh simply could not accept the idea that they were not naturally intended as servants to the K'kree. Though they no longer regard their masters as gods, there is still an intense feeling of awe and reverence characterizing all of their attitudes towards the K'kree.

Equally, the Girug'kagh feel a superiority over other non-K'kree races. They were the first race to attain full subject status, and consider themselves to be a sort of next step down in an interracial caste structure. The K'kree nobles, merchants, and servants come first, then the Girug'kagh, and then the rest of the universe. Many of the race's institutions are colored by this opinion, and the most honorable career to undertake is that of underservant to a K'kree group.

The Girug'kagh are often found as translators and intermediaries among the K'kree, particularly those K'kree who must deal outside the Two Thousand Worlds. Less easily offended by the

smell of meat-eating outsiders, and more capable of racial tolerance and enclosed spaces than their masters, they frequently are very useful at conducting negotiations and other functions requiring close contact between K'kree and outsiders.

GOVERNMENT AND MILITARY

The Girug'kagh government is a curious amalgamation of pre-contact structure and K'kree-imposed concepts. It is a loose caste system, in which a hereditary nobility (originally a "priesthood" selected to deal with the K'kree because they were the first who were willing to embrace vegetarianism and obey the K'kree in all things) rules, and various other functions and services are dominated by a guild structure which, though not completely dependent upon birth, does tend to limit social mobility. The only exception to the generally stagnant guild structure is the ability of anyone to volunteer for training to serve the K'kree as translators-cum-servants.

There is no true military. The K'kree provide defense from space, and the closest thing to a military is the Proctor's Guild, which is more a police force than anything else.

REFEREEING THE GIRUG'KAGH

Character Generation: Characters are rolled up with strength and endurance at 1D+2 (3-8); dexterity is 1D+7 (8-13). Social level is purely applicable to caste rank, and should be treated as described for other K'kree castes in the K'kree module. All other characteristics are handled normally.

Generally, the only Girug'kagh that need concern us are the translators, and a character generation table is included for creation of this group. While they have other "services," no one would generally be found off-planet.

Playing Girug'kagh: Girug'kagh display a peculiar mixture of subservience and arrogance: subservience to their overlords, but a haughty disdain for those below their station. They might be considered as equivalent to a highly proper English butler, a "gentleman's gentleman" . . . managing to convey an air of contempt while behaving with complete propriety.

When using the attitude table, K'kree react as usual to Girug'kagh; Girug'kagh are not subject to modifiers for meat-eating, enclosure, or being in company. The Girug'kagh do not use the K'kree reaction table; attitude results of 6 instead cause the individual to break off the discussion and give an unfavorable report of things to his master, who will then have a DM−3 applied to future attitude rolls when dealing with the same non-K'kree group or topic.

The Girug'kagh make good NPC's, but they are also useful both as an additional part of a "player-group" of K'kree (especially for diplomatic or mercantile parties), or as an independent player character with a K'kree group. The latter is an especially handy way to accommodate players who simply aren't up to the requirements of voluntary multiple schizophrenia associated with playing K'kree.

CHARACTER GENERATION DATA

The notes to the acquired skill tables are printed below.

Prior Service: Enlist 4+, DM +1 if Intelligence 8+; draft, none; survival 5+, DM +1 if Education 8+; position, none; promotion, none; return, 6+.

Benefits: There are no mustering-out benefits. The character remains a part of a K'kree family group, and receives equipment and cash as needed.

Consult Alien Module 2, *K'kree,* for a description of Tolerance skill.

Girug'kagh have no ranks.

Acquired Skill Tables

Personal Development

1	+1 Strength
2	+1 Dexterity
3	+1 Dexterity
4	+1 Endurance
5	+1 Intelligence
6	+1 Education

Service Skills

1	Steward
2	Steward
3	Tolerance
4	Jack-o-T
5	Gambling
6	Streetwise

Education

1	Tolerance
2	Admin
3	Computer
4	Admin
5	Tolerance
6	+1 Social

Advanced Education

1	Broker
2	Tolerance
3	Admin
4	Streetwise
5	Computer
6	Bribery

Restrictions: To be in diplomatic party.

Restrictions: To be in a Merchant Party

Skill Eligibility: Per term of service.....2

Automatic Skills:

Diplomatic Party.....Tolerance—1

Merchant Party.....Streetwise—1

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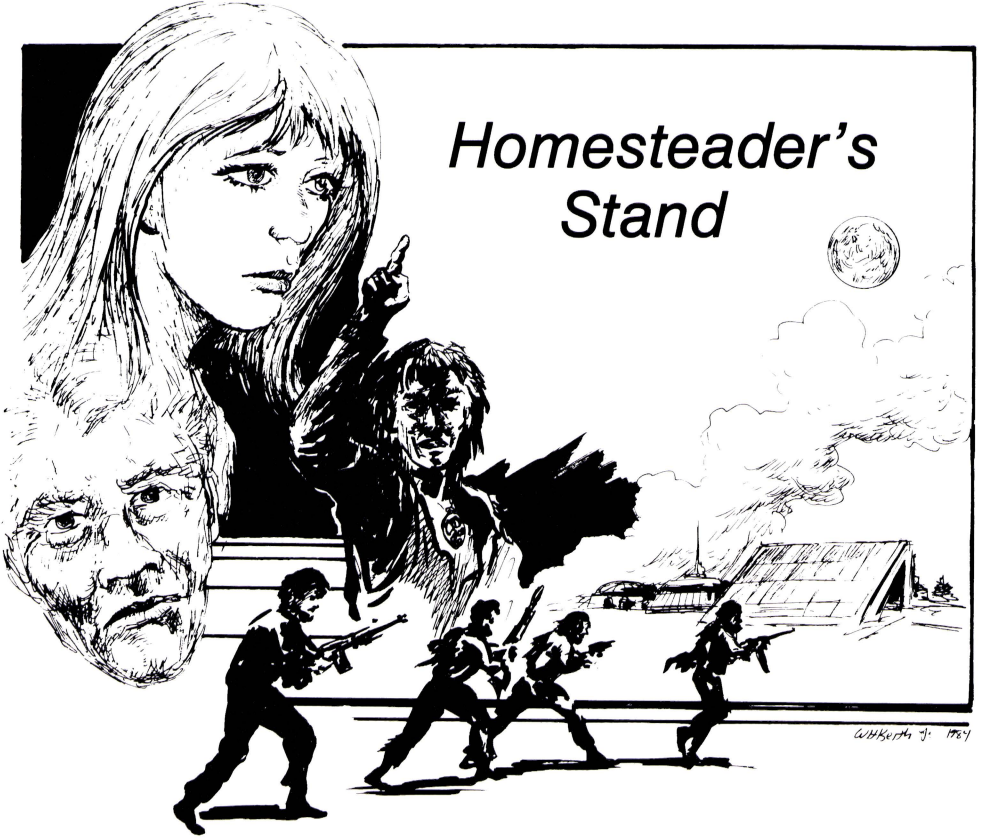

Homesteader's Stand

Players' Information

The girl was very pretty, and she was desperate. "They're going to kill my father," she told the adventurers when she met them at the starport, "and he refuses to leave his land!"

AMBER ZONE:

Dawn Sinclair was a childhood friend of one of the adventurers; they had grown up as neighbors in the Greensummer Valley on Lorelei, and it was only natural that he should give her a call when his ship returned him to Lorelei after several years' absence. When he called, however, his call had been relayed to an apartment in Firstfound, Lorelei's capital city near the starport. Dawn had been living there for several months with relatives, she explained. Her father had sent her away when the Yedos started making trouble.

The Yedos were newcomers to Lorelei, a ragged band of refugees who claimed they were persecuted members of an obscure religious sect declared heretical by the Church of We, the dominant religion on the neighboring world of Blukjere. The Loreleian population welcomed them with some misgivings at first; rumors and stories about the militant "We are Heirs and Rulers of the Universe" cult had filtered across two parsecs to disturb the peace of Lorelei for some years. Initial misgivings gave way rapidly to complete confirmation; the Yedos began by begging in the streets of Firstfound and proselytizing disaffected teenagers. They ended up building a commune in the Greensummer Valley which had quickly become an armed camp. No one knew for sure how many Yedos there were, but it was known that they had a small army with which they terrorized the inhabitants of the Greensummer Valley farms and

homesteads; they had claimed the Valley as their own, by right of their "heirship" as they called it. It was rumored that their Loreleian converts worked under close supervision in the compound—slaves, to all intents and purposes.

"Won't you help me?" Dawn pleads, looking up at her old friend with tears in her eyes. "Father is the last of the homesteaders left in the Valley. He says he'll never leave the land his grandfather proved—and the Yedos have threatened to kill him if he doesn't!"

REFEREE'S NOTES

The referee should get together with one of the **Traveller** players in the group before this Amber Zone adventure begins, and have him agree to be Dawn Sinclair's old friend. The character should be in his mid- to late-twenties (Dawn's age), and he will have been born and raised on Lorelei before having entered the service (whichever service that character chose) at the age of 18. This character may be given favorable die mods through the course of play in situations where he can use his firsthand knowledge of the player—where certain terrain features are, for example, or where the best bars are. For simplicity's sake, his parents are no longer living. As an added spur during the course of the adventure, it could turn out that the character's parents were killed by the Yedos.

Lorelei (C-668742-7) is a peaceful, agricultural world of gentle seasons and bucolic vistas. The trouble in Greensummer Valley is being caused by a band of fifty to sixty bandits armed with an assortment of autorifles, shotguns, and pistols, and led by an enigmatic fanatic named Lord Jerfed. His followers consider him invulnerable—and well they might, for he never goes anywhere without a personal bodyguard escort of five of his toughest thugs, all armed with Mark XXII autorifles.

Very little information will be available about the cult on Lorelei. It is common knowledge, however, that neighboring Blukjere is a religious dictatorship of the most oppressive kind.

The Loreleians have no desire to see their world go the same way, but for the moment they are helpless. Lorelei has never presented any threat to its inhabitants, and few among the population have weapons. The police force is a constabulary consisting of a handful of civil servants who double as circuit judges in boundary dispute cases and domestic quarrels. For several weeks, now, the Yedos have had their own way in the Valley and have recently begun extending their campaign of terrorism and extortion into Firstfound as well.

The adventurers should decide for themselves what they should do. They have several options, depending on their numbers, armament, and daring—all of which will have been established in previous **Traveller** adventures. The simplest route would be to pile into a truck (there are only wheeled vehicles on the planet, and a very few government-owned helicopters used in survey and rescue work), drive into the Valley to the Sinclair Homestead, and try to bring the girl's father out. He will steadfastly refuse to leave, and the adventurers will be unable to persuade him by any means short of knocking him out and dragging him off (an approach which has occurred to Dawn, but which she will not approve of).

It is certain that at some time during the adventurer's sojourn in the valley, they will be confronted by 2D + 4 Yedos, and commanded to leave "on pain of righteous justice." Subsequent events should be determined by the referee.

Another option, possible if the group has arms and ammunition, would be to go with Dawn to help defend the

homestead. Sooner or later (possibly before they even arrive, in which case the adventurers become the cavalry riding to the rescue) the farm will be attacked by 3D + 6 Yedos. A major victory (driving the bandits off and killing or capturing more than five of them) would hearten the Loreleians, causing them to organize a large (if spottily armed) army which will march on the Yedo compound.

Finally, the adventurers could dare to go straight to the Yedo compound and confront Lord Jerfed himself. Jerfed's death or capture would completely disorganize his followers, reducing them to a ragtag mob.

In all of these situations, the referee is responsible for creating the buildings, compounds, and terrain features which could be important. The Yedos are terrorist fanatics, and if they are opposed, there will be a firefight. If they find themselves outnumbered, or even on more or less equal terms, they will run away, but will work to find a way to strike back and win vengeance —their brand of "righteous justice".

This Amber Zone adventure offers little in the way of rewards for the group, though a grateful city council might chip in and grant the adventurers a special honorarium, the keys to the city, and so forth if the Yedos' power is broken. There is a definite possibility for romance, also, if Dawn recognizes new and previously unseen qualities in her old friend. Dawn Sinclair might possibly decide she's had enough of her bucolic valley, and choose to join the adventurers and see the universe.

— *William H. Keith, Jr.*

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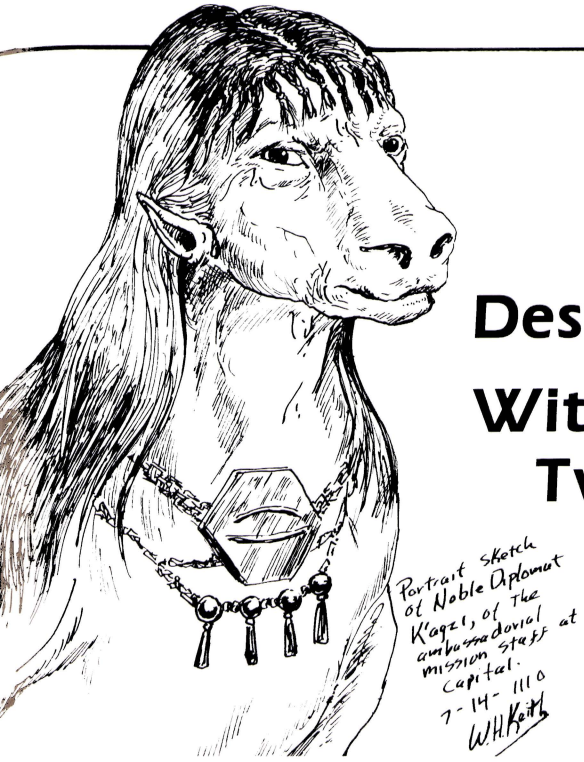

Destiny: Within the Two Thousand Worlds

So, Human, you wish to know something of the thoughts and philosophies of The People? An odd request, that, but then, yours is an odd race, one with motivations and reasonings difficult to scent. Of what possible benefit could a knowledge of our philosophies be to you? We, The People, have our place, in the Cosmos, as do you, and there could be no advantage to either of us in sharing the viewpoints of positions so vastly sundered.

Xaxk! Fortunate it is that you have approached us instead of another family group with your request. Old K'graxk now—do you know them? No? They cannot tolerate !xengri, and claim they can catch their stench at 10 kilometers. They'd never have stopped to bandy philosophy with you! But then, their family isn't as widely travelled, doesn't have that cosmopolitan . . . how do you say it . . . *savoir faire* . . . for travel and experience ours has. We, we're tolerant of the lower species. After all, they have their place and can't help being what they are, is it not so?

And, of course, we can tell that you are not g'naak. There are, after all, respectable limits even for the cosmopolitan! No entity who has consumed meat would be allowed within the portals of this embassy, a fact we believe all those of your species are well acquainted with.

Are you fully aware of what K'kree olfactory senses reveal to us? We can demonstrate. You have recently consumed several beakers of water infused with the oils of a dark, coarsely-powdered vegetable bean. We recognize the particular odor from other Humans we've conversed with, but don't recall the name. It is a mild stimulant to your species is it not? Also . . . yes . . . you have dined last night at the cafeteria here at the embassy. Mba roots in treer sauce, yes? A bit bland for our tastes,

but that seems to be a K'kree dish favored by many visiting Humans.

Oh, yes, we have little trouble reading the simple things about other species. Mmm. Further, we detect in you . . . behind the tainted water and mba roots . . . hmm . . . fear?. Not very strong. Perhaps we should call it, instead, nervousness. Understandable, of course, in a Human granted permission to interview a noble of our rank. Also, we detect recent sexual excitement . . . would that be the dark-maned female of your kind who accompanied you to the . . . what? But of course we know! We smell traces of her phermones mixed with yours . . . they are easy to detect, and quite unlike any other scent you produce. It is quite obvious to us, as obvious as that peculiar darkening of your facial skin just now. Ah . . . now we smell anger. You are angry? And surprised as well. You should not be so. Where you have sight as your primary sense, the K'kree count first the sense of smell, and if you don't understand such a simple fact, you have no chance at all of understanding The People.

What we fail to understand about Humans, despite our years of contact with them, is their preoccupation with this intangible you call "privacy." We understand the technical definition of "individual," "sole," "alone," and many more, but full understanding of privacy escapes us. You see around us the other members of our family? Believe when we tell you that we should be most distressed to be separated from one another at any time, for any reason. Even discussing the concept disturbs us. You will notice the others here becoming concerned at my scent of agitation. We must take a moment to compose ourselves.

Now, to go on, we have studied this concept called privacy since we were first assigned here. Frankly, it amazes us that such natural functions as elimination or procreation could be regarded as activities best hidden from everyone. All creatures which ingest food must eliminate wastes, after all. What purpose is served by concealing the fact? Of all the scents of Humaniti, that associated with what you call "embarrassment"—that sharp, almost spicy odor akin to the salty tang of fear which we perceive in you still—that is the hardest of your smells for us to comprehend.

My dear sir, we do NOT stray from the subject! To understand The People, you must understand what drives us, but Humaniti is so alien in thought and motivation, we scarcely know where to begin. Perhaps we can give you some glimmering of the wind-swept vistas of K'kree experience by examining a few of the most important concepts.

RIGHTNESS

K'lat'rr cannot be closely translated, but gives the scent of far horizons beyond rolling and unbounded prairie, red-golden backek releasing its flowery-sweet pollen in waves before the gentle breeze, on which floats the dark, wet and ozone-tingling smell of recent thunderstorms, mingled with the wet and comforting scents of family close by. Can such a scene fail to excite you, to set both hearts pounding in joy and . . . and . . . rightness?

Rightness . . . belonging . . . these perhaps best describe K'lat'rr, which signifies that everything is in its proper place, in its proper order, as it should be. An old Terran songweaver spoke of "God's in his heaven and all's right with the world." If by "God" he meant Ghik'keerik!k'ak T't'tkahk Xeng Kirr Tkexirr, he scented the concept with perfection.

POSITION

That brings us to t'ok, "position," you

might call it. Surely, even Humans can scent this, yes? One has only to observe life throughout the universe, how every organism, no matter how lowly, has its place within food chains and ecosystems and the broad scheme of things. In K'kree society, each has a place, each family a place, and there is little change. For over 7700 years the government seat of Kirur has been an example of stability, of order, of k'lat'rr . . . steady, steadfast, unchanging.

Eh? Freedom? What does freedom have to do with anything. Freedom is a thousand bits of chaff before the storm-wind, each swept its own way. Idiocy! There's a perfect example of how Humans try to understand The People through their own preconceived and biased notions. This freedom you Humans speak of seems to us bizarre, and sounds dangerous, if we understand aright the word. The function of a family's members is to join for the benefit of all. And each family joins with each other family for the benefit of the Herd and the Race, each with a place and position in the Grand Whole. Now, tell me, Human, where would we be if any common servant . . . or better, some non-K'kree kr'rrir . . . decided that it would be krurrunna? Unthinkable! What if we felt the freedom to strike you down where you stand? Nonsense! That's what our bodyguards are for after all . . . for their t'ok is to chastise at our command improprietous journalists who disrupt t'ok!

Your apology is accepted. Think nothing of it. Now, where was I?

ORDER

T't'k—"order"—proceeds from t'ok—"position." A Human would say we are "conservative," that we mistrust things new, and long delay adventures which could upset the natural order of things.

This is true enough, although the term conservative in this sense seems to have a negative connotation, as though change is always good, and that which holds back change is bad. Say, rather, that the new must prove itself before we embrace it, for to change merely for the sake of change is stupidity of the foulest-stenched sort. T't'k gives us patience. The People have spread slowly across the stars, lacking that mindless wanderlust which brands other species we have met. This is not weakness, but rather it is strength. Given the precepts of t'ok and t't'k, it could be no other way.

THE GOOD OF ALL

If something is keek!kr, it flows from t'ok and t't'kto the good of all. It . . . it seems self-explanatory, but you Humans are so . . . so . . . we have no word. What? Ah, yes, individualistic. We have used that word before, but it is so depressing a concept. Each driven its own way, as chaff before a storm.

Keek!kr is derived from the very beginnings of The People. Primitive herds naturally evolved the idea whereby each acted first and always for the good of the whole, to ensure the herd's survival and prosperity.

Humans we have conversed with in the past have expressed surprise that in our society we have no warrior caste, drawing, we believe parallels to certain social insects with which they are familiar. In K'kree society, ALL adult males serve at least some time in our military . . . direct outgrowth from the age-old concept of keek!kr. In the primitive herds, the strong males banded together to protect the females, the aged, and the young from g'naak. Later, they banded together to hunt down the g'naak, to seek them out and destroy them, acting together to free the herd from fear. This joining for the common good is so basic to our philosophy, it is

difficult to explain. We've heard words used by Humans to describe this, words like "selfless," or "altruistic," but words such as these suggest that such behavior is an alternative to the norm which simply cannot exist in K'kree thought or action. Keek!kr is simply another aspect of k'lat'rr and can only be explained as the way things are.

That "things" might be different among non-K'kree is one of the hardest lessons those of us who travel among other races must learn. We comfort ourselves with the knowledge that !xengr'ri cultures may yet arise to the K'kree level of social awareness. The spread of our culture has worked this miracle on countless civilizations . . . those we call kr'rrir . . . already, throughout the realm of the Two Thousand Worlds.

UPLIFT

Yes, it is true that The People concern themselves more with their own affairs than with the affairs of others. Is it not so with Humaniti? But we are more than willing to share the gifts of our culture with those around us . . . yes, more than willing! The Two Thousand Worlds are filled with examples who have enjoyed rrab!ak, that is, "uplift," and have become kr'rrir.

Our missionary outreach began long ago . . . at the very beginnings of our history as a space-faring people. Indeed, it is doubtful that we would have created the Two Thousand Worlds without the need to uplift others. True, true, those efforts began almost reflexively, to protect The People from the g'naak we discovered lurking on the newly discovered worlds, but we take pride in what we did as well, extending the consciousness of these races, bringing them to the benefits of true civilization and enlightenment. Our scientists have demonstrated that evolution will bring all races toward the K'kree norm given time. We are simply helping that natural process along, and reducing ages of blood-soaked misery and horror. We find hope for Humaniti in the fact that many of your people began to embrace vegetarianism before you left your homeworld.

MILITANT VEGETARIANS

Ah, yes. All Humans ask about that. Somehow, we think it is our army, our honored kirunika!rra—one of your writers translated that word as "pest control"—which most fascinates Humans. We gather that a scientist of Terra once, long ago before Terrans had ventured to the stars to meet other civilizations, proposed that intelligence would only develop among carnivores and omnivores, his reason being summed up in the asinine phrase "how much intelligence does it take to sneak up on a blade of grass?"

How consistently you Humans misunderstand the workings of the cosmos.

It was the original g'naak, of course, those long-extinct predators of Kirur, which impelled the K'kree onto the path of intelligence long ago, and not the mindless questing for food. In a way, it can be said that these g'naak themselves gave us the edge with which we supplanted them, demonstrating our superiority and our worthiness to survive. The judgement of the universe is final. There is a saying among us: "The People have the Two Thousand Worlds, the g'naak have dust."

The People have been called "militant vegetarians," an epithet which twists ironically to reveal truth. The term has no translation in our language; why translate what is, or build philosophies about what is self-evident? Certainly, we are vegetarians . . . and though we don't think of ourselves as "militant," certain-

ly we use militant means to induce rrab!ak among savages, for our security and for their well-being. Occasionally, when necessary, diseased cultures are eliminated, and for the same reasons. Can there be a nobler cause?

What shocks and surprises Humans is our dedication to this cause. It seems that Humans expect vegetarians to be meek and gentle, horrified at the sight of blood. This expectation would be amusing if it were not so outrageously pathetic. The K'kree are not bloodthirsty; we hunt neither for food nor for so-called "sport." Yet when we kill, we kill efficiently, without qualm or what you would call "conscience"—another difficult concept, that—and in the cause of K'kree well-being, we kill enthusiastically. It has been theorized that carnivores and omnivores are forced to develop certain restraints upon their behavior as they evolve social structures, restraints which prevent their destroying themselves. Herbivores such as The People know no such restraints; they have no need of them, and are far more dangerous in warfare.

We well remember a military campaign we served in some time ago. There was a Human military officer along, a representative of the Solomani Sphere, observing K'kree military techniques on a world inhabited by unregenerate g'naak of the worst kind.

These . . . savages had rebuffed our every effort to uplift them. It seemed they claimed a biological need for . . . for meat, which they consumed . . . lightly singed. The living animals they preyed upon provided them with an amino acid unavailable in the native plant life. It was a simple matter to synthesize this compound for them, but they refused to learn to do it. Certainly, there were problems storing the chemical, but the truth of the matter was that the creatures PREFERRED a diet of singed meat and resented our efforts to help them!

Eh! No, not primitives, not barbarians. They had a culture, of sorts, and a crude technological civilization. They lived in cities . . . grotesque, alien monstrosities with kilometer-high needles and arches of a pink and white stone . . . and the contact families reported they had an extensive literature, arts, music. But then, too, they actually HUNTED for SPORT. AND they raised herds of . . . living animals for food . . . excuse us, the memory is most painful.

We are composed again. The war was a savage one. Their cities were reduced to radioactive glass, their fortresses saturated with tailored biologicals and radioactive dusts, yet still they fought on as small bands in the mountains and jungles and swamps, forcing us to eliminate them a handful at a time.

We had found an isolated shelter in the mountains. They had tried to conceal their scents as well as their visible traces, but we located them in spite of their efforts. The Human was with us as we burst into the cave, to find a female and a pair of young, feeding. One of the young had blood smearing its mouth; the other was feeding on a whitish bloodlike secretion from the female. Such horror! Such hideous stench of death and burnt meat! We killed them all, of course, quickly and cleanly, with our feet, to save ammunition, since they were unarmed. What was amusing . . . is that a proper use of the word? What was amusing was the reaction of the Human observer, this supposedly hardened warrior, who fled the cave before we'd finished was later found being quite ill nearby. That proved a grand amusement among our troops; you know, of course, how we nurse our own young?

Carnivores cannot match herbivores for sheer ferociousness. Carnivorous semi-sophonts take note; behold yet

another example of innate K'kree biological superiority, a survival trait which will in time bring the spread of the K'kree cosmic view across the galaxy!

MANIFEST DESTINY

This brings us at last to the final concept, a system of belief rooted in K'kree culture since earliest times. Religion? You might call it that . . . although it is less religion as you know it than belief and faith. Perhaps the lower classes accord it the aura of religious belief; for we nobles, of course, fact is enough. The Human terms which best fit it are "manifest destiny," and it simply acknowledges the glorious destiny of the K'kree and our culture's principles in the cosmos.

Perhaps you are aware that "The Two Thousand Worlds" . . . the name for our empire . . . derives from a term indicating the night sky of Kirur? The term has nothing to do with how many worlds we hold.

Yes, with the unaided eye, it is possible to see about that many stars at one time . . . and it is our destiny to go forth to those worlds . . . really a symbol of the whole of creation . . . bring order and civilization, and the benefits of our peace. And why not? We have proven our ability . . . and our right . . . to survive, proven it again and again in the righteous and noble slaughter of countless g'naak species, and in the uplift of countless more. All K'kree maintain this as part of their cosmic-view, that they are destined by nature to rule, destined even to usher in a new age in planetary biology. Nothing can stop this; it is quite inevitable, basic to the entire foundation of bioevolution!

You disagree? Oh, but you do . . . you cannot lie to us, so why deny it? We scent your stink of anger and fear and revulsion. It matters not to us. Perhaps you're unaware that once we were Ghir'ghik'keer!k of a world within our sphere, a world inhabited by Humans. Omnivorous Humans! We took part in their rrab!ak, their . . . taming . . . we supervised the eradication of the diehards among them, and we governed the survivors for seven years after that. We watched the colony transformed from savagery to civilization and happiness. We know the benefits of the K'kree way!

Well . . . very well, if you feel that way. The opinion of a Human can hardly matter to us. Our bodyguards will show you out . . . but long will be the time before we grant another interview to a Human!

It will take days to rid the compound of the last traces of your stench . . .

K'agzi X'ten kri'kri!k K't' Hk'tree'tri
Lixt'rr !kru Kraxenga

(Noble Diplomat of the 25th Degree, of the family K't'xra, who attends the Nobler Ambassador Kraxenga, of the herd X'ten), as recorded and transcribed by

William H. Keith, Jr., of Scotia

Editor's Note: The Noble K'agzi is part of the diplomatic staff at Capital. After a distinguished military career, he was adopted into the family of the reknowned Krazenga himself. His mastery of diplomacy, tact, and interspecies understanding has led to new inroads in Human-K'kree friendship and cooperation.

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Bestiary: The Micro-Ecology of Quicoral

Quicoral is similar to the ubiquitous Terran coral polyp common to many waterworlds. On Argos, a higher amount of dissolved minerals, and other factors produced a form that grows at a fantastic rate. The coral itself grows initially in the large tidal swamps of Argos, forming buoyant mats of pumicelike material, perfused with vegetable matter. From time to time, these "rafts" break loose and float out to sea, still growing. In the free state, they attain diameters up to 25 meters, and become a convenient home for other life. Rafts reach their greatest size after about 11 months. They eventually break up in storms, on beaches, or frigid waters. The growth rate is thought to be a defense against rapid wave erosion. Once considered a mere nuisance to watercraft,

they are now being studied by several off-world institutions as a building material, and as a low-tech method of sea mineral extraction.

The upper surface of the raft is often populated by Sail Trees. These plants average a meter in height and consist of a hollow stem topped by a compound leaf supported by radiating spines, all of which make the tree look like a duck's webbed foot. The leaf "sail" unfurls to collect light, or funnel rainwater to the stem. These leaves fold at night, in cold or high winds. Sail trees are the basis for a micro-world of small animals living in and off the plant.

Even stranger are the adaptations of life under the rafts. The biggest hitchhiker is usually an Argosian Hydra. Essentially a common filter-feeder, the hydra originated in the mud of the tidal swamps, but has adapted to a unique ecological niche, attached to the underside of a loose raft. Hydras reach a length approximately equal to the diameter of the raft. They catch small prey with stinging, grappling tentacles. Though not strong enough to subdue a Human, the stinging cells of the tentacles are poisonous, occasionally fatal, and always painful. Hydras reproduce by fission, and during this process are extra-hungry, attacking everything in range (they have no armor, their average weight is 25 kg.).

On Argos, the rafts were an early means of transport between the world's many scattered islands, and are still used occasionally by less advanced native tribes as vessel and home. In this case, the quicoral rafts influenced not only the evolution of a few sea creatures, but an entire Human planetary culture. Archeological teams from all over the Imperium come to study Argos' early days.

By adapting the polyp to new uses, the inhabitants of Argos expect to be able to transform their world once more with this "organic iceberg".

— *Mark P. Suszko*

Next Issue:

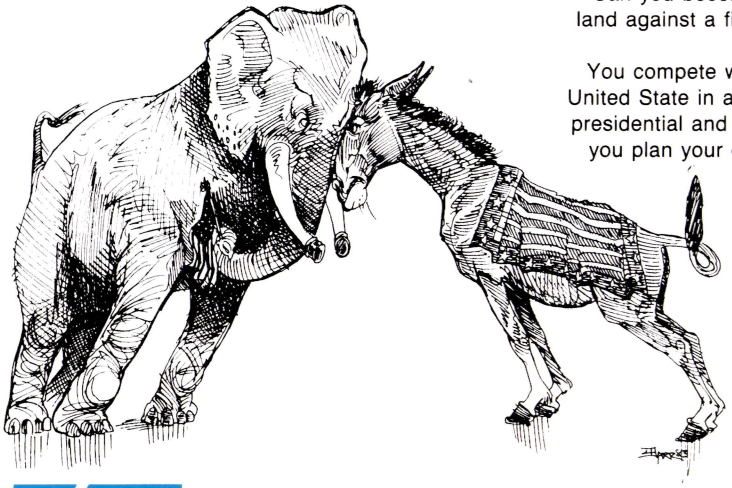
Planetary Maps: Chris Struble's short but informative planetary mapping system.

From Port to Jumpoint: In *Ref's Notes* Leroy W. Guatney deals with the question "what happens after a starship leaves a world but before it jumps?"

PLUS: A new alien race by Phil Masters, Amber Zones, our other regular features, and more.

Campaign Trail

The Game of Presidential Elections



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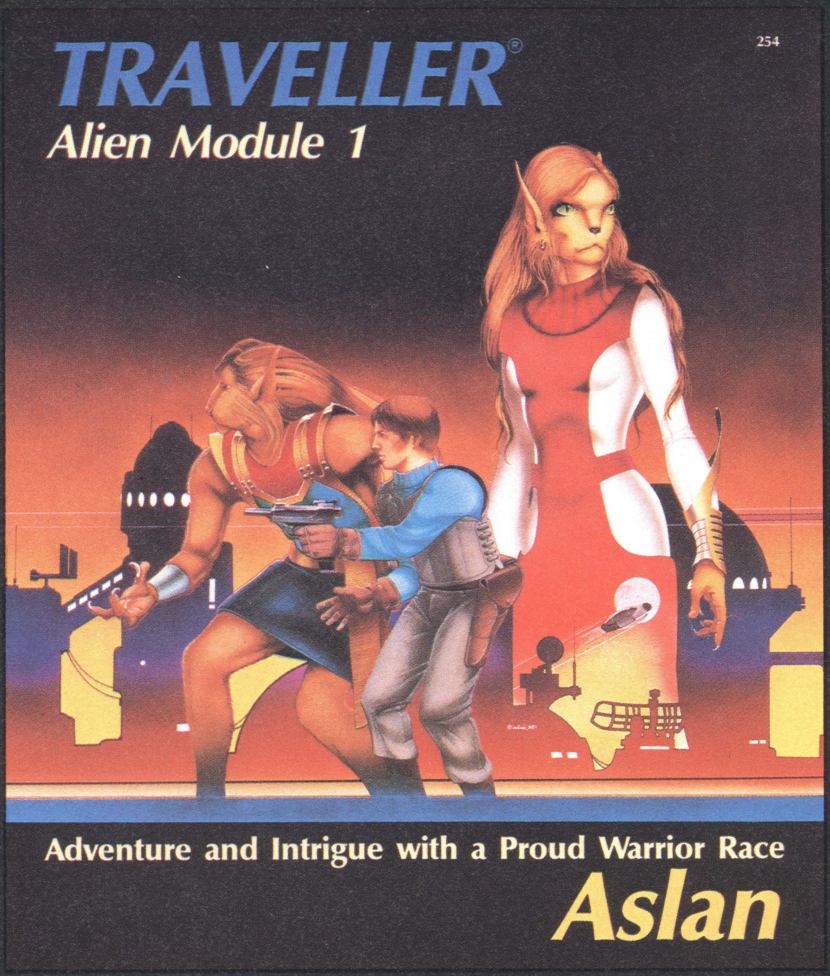

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